



the journey is the reward

MEDINA WHARF

COWES, ISLE OF WIGHT

**GENERIC QUANTITATIVE RISK
ASSESSMENT**

MARCH 2013

MEDINA WHARF

COWES, ISLE OF WIGHT

**GENERIC QUANTITATIVE RISK
ASSESSMENT**

MARCH 2013

Project Code:	R/PDEMedinaWharf.9
Prepared by:	Antony Platt
Approved by:	Rasmus Palmgren
Issue Date:	March 2013 (V2)
Status:	FINAL

**MEDINA WHARF, COWES, ISLE OF WIGHT
GENERIC QUANTITATIVE RISK ASSESSMENT**

Contents

0.	EXECUTIVE SUMMARY	1
1.	INTRODUCTION	4
1.1	INSTRUCTION	4
1.2	LEGAL CONTEXT	4
1.3	METHODOLOGY	5
1.4	PROPOSED USE	6
1.5	REPORT SCOPE AND LIMITATIONS	6
1.6	PREVIOUS REPORTS REVIEWED	7
2.	PRELIMINARY RISK ASSESSMENT	10
2.1	SITE LOCATION AND DESCRIPTON	10
2.2	SITE HISTORY	11
2.3	DOCUMENTATED GROUND CONDITIONS	12
2.4	ENVIRONMENTAL DATA SEARCH	13
2.5	DEPARTMENT OF ENVIRONMENT – INDUSTRY PROFILES	14
2.6	NOTICES OF MODIFICATION OF WASTE DISPOSAL LICENCE CONDITIONS	14
2.7	CONSULTATION WITH REGULATORS	15
2.8	OUTLINE CONCEPTUAL SITE MODEL	16
2.9	CONCLUSIONS OF PRELIMINARY RISK ASSESSMENT (PRA) ...	16
3.	FIELDWORK SUMMARY OF SCOPE AND RATIONALE	17
3.1	PROPOSED INVESTIGATION STRATEGY	17
3.2	RATIONALE AND SUMMERY OF SCOPE	18
3.3	MONITORING	19

3.4	SITE INVESTIGATION STANDARDS	20
4.	GROUND CONDITIONS ENCOUNTERED.....	21
4.1	SOIL CONDITIONS.....	21
4.2	OBSTRUCTIONS	23
4.3	GROUNDWATER CONDITIONS	23
4.4	VISUAL / OLFACTORY EVIDENCE OF CONTAMINATION	25
4.5	GROUND GAS.....	25
5.	GENERIC RISK ASSESSEMNT	26
5.1	CONTAMINATION ASSESSMENT METHODOLOGY	26
5.2	SOIL ASSESSMENT	29
5.3	LEACHATE ASSESSMENT	31
5.4	GROUNDWATER ASSESSMENT	34
5.5	GROUND-GAS ASSESSMENT	36
6.	CONCEPTUAL SITE MODEL	38
6.1	SOURCES.....	38
6.2	PATHWAYS	39
6.3	RECEPTORS	39
6.4	RISK ASSESSMENT PROCEDURE	40
6.5	POLLUTANT LINKAGE DISCUSSION AND MITIGATION MEASURES.....	44
7.	CONCLUSIONS AND RECOMMENDATIONS	47

**MEDINA WHARF, COWES, ISLE OF WIGHT
GENERIC QUANTITATIVE RISK ASSESSMENT**

List of Tables

Table 2.1.	Data search results.....	13
Table 2.2	Outline conceptual model	16
Table 3.1	Exploratory hole location rationale	19
Table 4.1	Summary of encountered ground conditions	21
Table 6.1	Sensitivity of receptor	40
Table 6.2	Magnitude of impact	40
Table 6.3	Level of severity for potential hazard.....	41
Table 6.4	Probability of risk definition.....	41
Table 6.5	Level of risk for potential hazard definition	41
Table 6.6	Pollutant Linkage Assessment	43

List of Figures and Appendices

FIGURE 1: SITE LOCATION PLAN

FIGURE 2: INVESTIGATION LOCATION PLAN

FIGURE 3: CONCEPTUAL SITE MODEL

FIGURE 4: INVESTIGATION LOCATION PLAN ON 1897 OS MAP

APPENDIX A: REPORT CONDITIONS

APPENDIX B: ENVIROCHECK REPORT

APPENDIX D: ENGINEERING LOGS

APPENDIX E: GENERIC ASSESSMENT CRITERIA

APPENDIX F: SOIL, LEACHATE AND GROUNDWATER SCREENING SUMMARY

APPENDIX G: CHEMICAL ANALYSIS RESULTS

APPENDIX H: MONITORING DATA

0. EXECUTIVE SUMMARY

Brief	The initial brief was to undertake a site investigation and assessment to identify any ground contamination issues that may affect the proposed development. This report provides an assessment of the identified and potential ground conditions of the site, with regard to the proposed works in accordance with the Model Procedures for the Management of Land Contamination (CLR 11), published by the Environment Agency.
Current Site Status and History	<p>The Site is located close to the western shore of the River Medina on the Isle of Wight and is approximately two kilometres to the south of the centre of Cowes. The Site extends to approximately 2.1 Ha and is currently largely covered with sparse grasses, scrub and dense overgrowth. There are no physical features on the ground to delineate the eastern and southern boundaries of the Site with a belt of trees being close to the western boundary. There is a coal yard and depot adjacent to the northwest of the Site which comprises an area of concrete hardstanding (45m x 110m). The area is largely flat with no infrastructure other than a portion of an old concrete surfaced area that is associated with the adjacent coal yard. The Site currently lies between 8.0 - 8.5m AOD at the northern end and between 9.5 - 10.0m AOD at the southern end, compared to the adjacent surface water level which varies between approximately -2.0m AOD and 1.8mAOD.</p> <p>According to the Ordnance Survey maps provided from 1864 to 2012 scales 1:2,500, 1:10,000, 1:1,250, 1:10,560, the northeast half of the Site comprised mud flats of the River Medina until they were reclaimed as managed oyster beds in the late 1800s with a bund constructed around the perimeter of the beds to control the water level. The southeast of the Site was solid land sloping up from the oyster beds to the railway embankment that formed the western Site boundary. The oyster beds appear to have fallen into disuse during the 1930s and are shown to be largely marshy by 1947. Active filling of the Site appears from the historical maps to have started during the 1960s and took place from the northwest corner of the Site. By 1987 the Site appears to have been predominantly filled and the concrete slab in the northwest corner of the Site and beneath the coal yard is shown to be present.</p>
Geology	Reference to the British Geological Survey (BGS) Map (Sheet 330, Lymington, Scale 1:50,000) indicates the landfill material beneath the Site to directly overlie superficial deposits of Alluvium (clay, silt, sand and gravel) over the bedrock geology of the Headon Beds and Osborne Beds (Undifferentiated) (clay, silt and sand) and a relatively thin layer of Bembridge Limestone Formation over the Headon Beds and Osborne Beds in the southwest corner of the Site. The Bembridge Marl Formation (calcareous mud) is identified to be present to the west of the Site above the Bembridge Limestone Formation.
Hydrogeology	The Environment Agency Groundwater Vulnerability Map (Sheet 52 Southern Hampshire, Scale 1:100,000) indicates the Site to be overlying a Secondary A aquifer in the superficial deposits, interpreted as Alluvium, and Secondary A aquifers in the bedrock geology, interpreted as both the Headon Beds and Osborne Beds and the Bembridge Limestone Formation. The Bembridge Marl Formation to the west is classified as an unproductive stratum. The Site is not located within a Groundwater Source Protection Zone.
Hydrology	The nearest identified surface water feature is the River Medina which is close to the eastern boundary of the Site and flows in a general northerly direction. It is likely that the River Medina is in hydraulic continuity with the base of the landfill beneath the Site.

Ground Investigation	<p>Site investigation works were undertaken by Mayer Brown between the 3rd and 18th December 2012. The fieldworks for the ground investigation comprised 5no. cable percussive boreholes to a maximum depth of 19.1mbgl and 9no. window sample boreholes, using a combination of Geoprobe and Terrier rigs, to a maximum depth of 11.4mbgl, with gas / water standpipe installations in all cable percussive boreholes and 5no. of the window sample boreholes.</p>
Ground Conditions	<p>The ground conditions at the Site comprise:</p> <ul style="list-style-type: none"> • All boreholes were drilled through the waste of the underlying landfill, which varied in thickness from approximately 4.0m in the southwest to approximately 10.8m in the northeast. The landfill predominantly comprised a gravelly clay matrix with bands of sandy ash and clinker gravel with frequent anthropogenic inclusions including concrete, brick, plastic sheeting, asbestos cement sheeting, timber, glass and metal. BH107-109 terminated within this material. • Alluvium, comprising very soft grey silty clay, was encountered directly beneath the waste material in BH102, BH2 and BH3, which were situated in the area of the main former oyster bed. This Alluvium had a maximum recorded thickness of 4.8m in BH3 in the northeast of the Site. BH102 terminated within this material. • Headon Beds and Osborne Beds, comprising firm to stiff light grey mottles orange brown slightly silty clay with small shell fragments, were encountered directly beneath the waste in the southern and western boreholes and directly beneath the Alluvium in the north and eastern boreholes. Limestone was encountered within this material at 11.6mbgl in BH1. This material formed the basal layer for the majority of boreholes with a maximum proven thickness of 4.0mbgl. The full thickness of the stratum was not proven. • Groundwater was encountered at 11.6mbgl (-3.57mAOD) and 7.7mbgl (0.43mAOD) in BH1 and BH3, respectively, during the site investigation. Groundwater was recorded at variable depths across the Site but generally appears to follow the profile of the upper surface of the Headon Beds and Osborne Beds in the southwest of the Site. This appears to be more consistent with pockets of perched water retained above the low permeability natural strata rather than a consistent flowing water body within the waste. The groundwater levels in BH2 and BH3 in the northeast of the Site are relatively consistent over the monitoring period and are likely to be in continuity with each other and retained above the low permeability Alluvium in the former oyster beds. • The data do not indicate an obvious groundwater flow direction across the Site although mobile water within the landfill is likely to migrate towards the former oyster bed basins in the north and east of the Site. • Monitoring of four boreholes (BH1, BH2, BH101 and BH102) over a 7hr tidal period during the investigation showed no change in groundwater depth with a 3.8m tidal variation. This indicates that the groundwater beneath the Site is not tidally influenced and is unlikely to be in significant hydraulic continuity with the River Medina. This is likely to be largely to do with the former oyster bed bunds continuing to prevent significant water movement between the landfill and the River, with an additional influence of the 15m of non-waste fill material (likely to be clay) placed between the waste and the River during the construction of the landfill.

Ground Contamination Assessment	<ul style="list-style-type: none"> Asbestos containing materials were encountered within the near surface waste and capping material. Low concentrations of TPH were encountered in shallow soils that could impact buried services. Several heavy metals, petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAHs) and several inorganic compounds were identified in groundwater samples and leachate samples of the solid waste material at concentrations with the potential to detrimentally impact sensitive environmental receptors. However, as the monitoring data, the construction of the landfill and the residual structures associated with the former oyster beds use of the Site indicate that there is no significant hydraulic continuity between the groundwater beneath the Site and the River Medina, a significant pollutant linkage is not considered to be present between the impacted groundwater and the River. Generally slightly elevated concentrations of carbon dioxide and flammable gas as methane were recorded in the boreholes across the Site with locally highly elevated concentrations (BH1). No measurable ground gas flow rates were recorded. A ground gas regime classification of Characteristic Situation 2 is therefore considered appropriate for the Site with no need for further monitoring.
Recommendations	<p>In order to mitigate the risks associated with the significant pollutant linkages the following mitigation measures are recommended:</p> <ul style="list-style-type: none"> Any Site won material reused in the construction of the proposed bunds and redevelopment of the Site should be handled in controlled conditions and capped following placement and any of the present Site material exposed during the redevelopment should be capped during the redevelopment to prevent the release of asbestos fibres. Suppliers of buried services for the development, particularly water supply pipes, should be provided with the data from this document to allow the appropriate material selection. As the only buildings proposed for the development are portacabin structures, the design of the structures (i.e. raised above the ground) are considered to be sufficiently protected from ground gas by design with no additional protection measures recommended. Any other enclosed spaces within the development must be sufficiently ventilated. Contractors on Site should wear appropriate PPE to mitigate the risks from the chemical and physical impacts to the Made Ground at the Site, particularly asbestos. <p>These mitigation measures, as with any such mitigation or remedial measures, are subject to agreement with the regulatory authority, be it the Local Authority for human health related issues or the Environment Agency for environmental issues.</p>
<p><i>This sheet is intended to provide a summary only of the initial indicative assessment study of the Site in relation to ground contamination. It does not provide a definitive engineering analysis for the purposes of costing or construction, and is subject to the limitation of the agreed brief.</i></p>	

1. INTRODUCTION

1.1 INSTRUCTION

Mayer Brown Ltd. was commissioned by PDE Consulting Ltd. on behalf of Eurovia Roadstone Ltd. in October 2012 to undertake a Ground Condition Assessment of a former landfill located at Medina Wharf, Cowes, Isle of Wight (the Site).

The initial brief was to undertake a site investigation and assessment to identify any ground contamination issues that may affect the Site. This report provides an assessment of the identified and potential ground conditions of the Site, with regard to the proposed works in accordance with the Model Procedures for the Management of Land Contamination (CLR 11), published by the Environment Agency.

This report is prepared in line with the agreed brief and is subject to the report conditions shown in Appendix A.

1.2 LEGAL CONTEXT

Part IIA of the Environmental Protection Act 1990 (inserted by Section 57 of the Environment Act 1995) provides a regime for the control of specific threats to health or the environment from land contamination. In accordance with the Act and the statutory guidance document 'The Contaminated Land (England) Regulations 2000', the definition of contaminated land is intended to embody the concept of risk assessment. Within the meaning of the Act, land is only "contaminated land" where it appears to the Regulatory Authority, by reason of substances within or under the land, that:

- Significant harm is being caused, or there is a significant possibility of such harm being caused; or
- Pollution of controlled waters is being, or is likely to be, caused."

Inherent in this definition is the requirement for contamination risk assessment to be undertaken on a site specific basis, as the potential for harm is determined by the Site's end use and its specific environmental setting.

The guidance defines "risk" as the combination of:

- The probability, or frequency, of occurrence of a defined hazard (for example, exposure of a property to a substance with the potential to cause harm); and
- The magnitude (including the seriousness) of the consequences.

1.3 METHODOLOGY

This report has been prepared in accordance with published Environment Agency guidance ('Model Procedures for the Management of Land Contamination – Contaminated Land Report (CLR) 11'). CLR 11 provides the technical framework for structured decision making about land contamination and builds on previous work carried out under the Contaminated Land Research Programme (of the former Department of the Environment). CLR 11 has adopted and refined the well recognised methodology and terminology that has been used in contaminated land risk assessment for a number of years.

1.3.1. Pollutant linkage concept

In the context of land contamination, there are three essential elements to any risk:

- A **contaminant source** – a substance that is in, on or under the land and has the potential to cause harm or to cause pollution of controlled waters.
- A **receptor** – in general terms, something that could be adversely affected by a contaminant, such as people, an ecological system, property, or a water body.
- A **pathway** – a route or means by which a receptor can be exposed to, or affected by, a contaminant.

Each of these elements can exist independently, but they create a risk only where they are linked together, so that a particular contaminant affects a particular receptor through a particular pathway. This kind of linked combination of contaminant–pathway–receptor is described as a pollutant linkage.

1.3.2. Conceptual model

An important thread throughout the overall process of risk assessment is the need to formulate and develop a **conceptual model** for the Site, which supports the identification and assessment of pollutant linkages. A conceptual model represents the characteristics of the Site in diagrammatic or written form that shows the possible relationships between contaminants, pathways and receptors (pollutant linkages).

1.3.3. Risk assessment

CLR 11 advocates a phased approach to risk assessment comprising the following in order, as necessary:

Preliminary Risk Assessment – a desk study consisting of a review of documentary, anecdotal and site walk over evidence.

Generic Quantitative Risk Assessment (GQRA) - comparison of contaminant concentrations obtained from site investigation with generic assessment criteria.

Detailed Quantitative Risk Assessment (DQRA) - comparison of contaminant concentrations obtained from site investigation with site-specific assessment criteria.

This document constitutes a Preliminary and Generic Quantitative Risk Assessment.

1.4 PROPOSED USE

The proposed development is an asphalt plant together with associated ancillary facilities including: mobile cold recycling plant, mobile crusher, weighbridges, offices, lorry park, storage bays, workshop, access and use of the existing wharf.

The intention is to re-grade the surface of the old landfill site to form appropriate falls to control surface water and then 'cap off' using primary/recycled aggregates, topped with asphalt or concrete.

Screening bunds are proposed to be located on the eastern, southern and western boundaries along with shrub and tree planting. It is currently intended that approximately one third of the material to form the bunds would be obtained from the re-grading of the Site, provided the recovered material is suitable for use.

This assessment has been undertaken on the basis of this proposed use and a change in Site use from that currently proposed may result in the need for re-assessment of risk criteria and the conclusions and recommendations resulting from the risk assessment could therefore significantly change.

1.5 REPORT SCOPE AND LIMITATIONS

This report is based upon a review of readily available historical and current information, our own geological and hydrogeological map library, the recent site investigation data detailed herein, and information from an environmental database search.

The report presents an interpretation of the borehole and laboratory data provided by the Mayer Brown Site Investigation undertaken between the 3rd and 18th December 2012. In addition, this report outlines the basic ground conditions encountered in the exploratory holes and the results of any monitoring of ground installations. This information has been collated, processed and used to provide an interpretation of the ground conditions, with recommendations on potential ground contamination risks for the proposed development.

The recommendations and opinions expressed in this report are based on the strata observed in the exploratory holes, the results of the Site and laboratory tests, and information obtained as part of the desk study or provided by others. Mayer Brown takes no responsibility for conditions that have not been revealed by the exploratory holes, or which occur between them. Whilst every effort has been made to interpret the conditions between investigation locations, such information is only indicative and liability cannot be accepted for its accuracy. Information provided from other sources is taken in good faith and Mayer Brown cannot guarantee its accuracy.

The information contained in this report is intended for the use of Eurovia Roadstone Ltd. Mayer Brown can take no responsibility for the use of this information by any other party or for uses other than that described in this report.

1.6 PREVIOUS REPORTS REVIEWED

1.6.1. Author Unknown, *Medina Wharf – South, Soil Pit Survey of Old Tip Site Area*, (March 1993).

This document comprises a plan of the Site indicating the locations of nine trial pits on a regular grid pattern across the southern half of the landfill (all south of the existing concrete slab) and a series of hand written trial pit logs and photographs. The trial pits were all machine excavated to a depth of 4.0mbgl (to approx. 6.0mAOD to 7.5mAOD). The document does not contain any chemical or geotechnical testing results or assessment.

1.6.2. PDE Consulting Ltd., *Risk Assessment for a Proposed Development at Medina Wharf*, (March 2012).

This geo-environmental assessment was commissioned by Eurovia Roadstone Ltd. to support the planning application for the proposed asphalt plant. The report comprises a Preliminary and Generic Quantitative Risk Assessment and describes a trial pit investigation and gas spike survey undertaken by PDE in March 2012.

The investigation comprised the excavation of eight machine excavated trial pits across the proposed development area to depths of 2.0mbgl and recovery of soil/waste samples from 2.0m in each of the trial pits. The samples were submitted to a UKAS accredited laboratory for solid and leachate testing for a broad suite of potential contaminants. However, due to the samples being delivered to the laboratory in bulk bags, the total petroleum hydrocarbon (TPH) results for the solid samples are indicative only and are not covered by the laboratories accreditation. The remainder of the analysis is understood to be accredited.

The report concludes that the soil analysis results did not show any exceedance of the generic assessment criteria used and the leachate results compared favourably with most of the Environmental Quality Standards such that the Site is not considered to cause a significant risk to groundwater, surface water of the development.

A gas spike survey was undertaken at 21 no locations across the proposed development area and showed no elevated concentrations of flammable gas as methane and slightly elevated concentrations of carbon dioxide.

In conjunction with the material encountered in the trial pits, the report therefore concludes that the potential for the Site to produce significant concentrations of methane or carbon dioxide gas in the future is very low.

Regulatory Review

This report was reviewed by the Isle of Wight Council's retained consultant, WPA Consultants Ltd., who identified various concerns with the report. These included:

- Not sampling from the horizons that pose the greatest potential risk to receptors,
- Not using CLEA compliant assessment criteria when SGV's are not available,
- Gas spiking, which is not considered best practice for ground gas assessment,
- Gas monitoring not compliant with good practice such as CIRIA C665.

WPA therefore recommended that the PRA be substantially revised and that further site investigation and risk assessment is required.

1.6.3. BCL Consultant Hydrogeologists Ltd., *Water Resources & Hydrogeology Assessment*, (March 2012).

This predominantly desk based assessment was commissioned by Eurovia Roadstone Ltd. to support the planning application for the proposed asphalt plant. It includes a baseline review of the Site setting, geology, hydrogeology and hydrology of the Site and the surrounding area, incorporating a review of potential sources of contamination and identification of potentially sensitive receptors. However, the report does not assess the risks or impact of the landfill on the surrounding water environment.

It was noted, however, that the report includes confirmation from the Environment Agency that there are no groundwater or surface water abstractions in the vicinity of the Site.

1.6.4. Author Unknown, *Medina Wharf South Site Development Plans 1993 - 2001*

This document is a compilation of options, sketches and costs for re-profiling the surface of the Site in 1993 and a letter relating to the development potential of the Site in 2001, with reference to the introduction of the Register of Contaminated Land. A series of photographs of the Site being re-graded are also included.

The document indicates that works were required to finish off the landfill in 1993. The photos are consistent with the sketches indicating that fill was placed on the landfill post 1993 to bring it to its current level.

2. PRELIMINARY RISK ASSESSMENT

2.1 SITE LOCATION AND DESCRIPTION

The Site is located close to the western shore of the River Medina on the Isle of Wight and is approximately two kilometres to the south of the centre of Cowes.

The Site extends to approximately 2.1 Ha and is currently largely covered with sparse grasses, scrub and dense overgrowth. There are no physical features on the ground to delineate the eastern and southern boundaries of the Site with a belt of trees being close to the western boundary. There is a coal yard and depot adjacent to the northwest of the Site which comprises an area of concrete hardstanding (45m x 110m).

The Site is currently not in use after being infilled over an extended period of time. The historic landfill upon which the Site and coal yard sit extends across a rectangular block of land measuring roughly 275 m (length) by 125 m (width), the long axis being aligned north-south. The historic landfill is delimited by the main river to the east, a cycle path / footpath to the west and muddy inlets / tributary streams to the north and south. The area is largely flat with no infrastructure other than a portion of an old concrete surfaced area that is associated with the adjacent coal yard. The Site currently lies between 8.0 - 8.5m AOD at the northern end and between 9.5 - 10.0m AOD at the southern end, compared to the adjacent surface water level which is understood to vary between approximately -1.99m AOD (low water at Cowes) and 1.81mAOD (high water at Cowes).

The land to the west of the cycle path is predominantly put to agricultural use. Upstream from the muddy inlets (mentioned above), the streams are bordered by woodland: Bottom Copse alongside the more northerly stream; and Calving Close Copse adjacent to the southerly watercourse.

To the north of the landfill, the active wharf is under the control of PD Port Services and is leased to a number of separate businesses with mixed use, including: grain silos operated by Isle of Wight Grain Storage Limited (closest proximity to the Site), ballast washing plant run by Isle of Wight Aggregates Limited (mid-wharf) and yard/buildings occupied by marine engineers, Mackley Construction (northern end of wharf, furthest from the landfill) and bulk cargo handling by PD Port Services.

The River Medina lies close to the eastern boundary of the Site and has a number of ecological designations. These include: the 'Solent Maritime' Special Conservation Area, the 'Southampton Water and Solent Marshes' Important Bird Area and Medina 'Shellfish Area'.

The area to the south of the Site (as well as the opposite side of the river) is also an important habitat. It is designated as the 'Solent and Southampton' Ramsar Site and Special Protection Area and the 'Medina Estuary' Site of Special Scientific Interest.

2.2 SITE HISTORY

According to the Ordnance Survey maps provided from 1864 to 2012 scales 1:2,500, 1:10,000, 1:1,250, 1:10,560 the northeast half of the Site comprised mud flats of the River Medina until they were reclaimed as managed oyster beds in the late 1800s with a bund constructed around the perimeter of the beds to control the water level. The southeast of the Site was solid land sloping up from the oyster beds to the railway embankment that formed the western Site boundary. A spur to the railway line is also evident to the north of the Site, across the current Site access track, from at least 1898 that extends to a jetty on the River Medina approximately 500m to the north of the Site. The oyster beds appear to have fallen into disuse during the 1930s and are shown to be largely marshy by 1947.

Active filling of the Site appears from the historical maps to have started during the 1960s and took place from the northwest corner of the Site, as shown on the map extract from 1966/67. However, a modification notice to the Waste Disposal Licence (1979) for the Site indicates that the landfill was licenced from 1977, although this may not have been the original licence. A gasworks, understood to have been opened during the 1920s, was present on the opposite bank of the River Medina during the period that waste was initially deposited on Site.

By 1987 the Site appears to have been predominantly filled and the concrete slab in the northwest corner of the Site and beneath the coal yard is shown to be present. However, landfilling operations are known to have continued in to the 1990s from the available waste licence records.

The railway line adjacent to the western Site boundary and the spur to the north were closed in the 1960s but the embankment remained and is now the cycle path / footpath to the west of the Site. The level of the railway embankment appears to have largely dictated the surface level of the landfill.

2.3 DOCUMENTATED GROUND CONDITIONS

Ground conditions recorded in readily available sources are summarised below.

2.3.1. Geology

Reference to the British Geological Survey (BGS) Map (Sheet 330, Lymington, Scale 1:50,000) indicates the landfill material beneath the Site to directly overlie superficial deposits of Alluvium (clay, silt, sand and gravel) over the bedrock geology of the Headon Beds and Osborne Beds (Undifferentiated) (clay, silt and sand) and a relatively thin layer of Bembridge Limestone Formation over the Headon Beds and Osborne Beds in the southwest corner of the Site. The Bembridge Marl Formation (calcareous mud) is identified to be present to the west of the Site above the Bembridge Limestone Formation.

2.3.2. Hydrogeology

The Environment Agency Groundwater Vulnerability Map (Sheet 52 Southern Hampshire, Scale 1:100,000) indicates the Site to be overlying a Secondary A aquifer in the superficial deposits, interpreted as the Alluvium, and Secondary A aquifers in the bedrock geology, interpreted as both the Headon Beds and Osborne Beds and the Bembridge Limestone Formation. The Bembridge Marl Formation to the west is classified as an unproductive stratum.

Unproductive strata are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

Secondary A aquifers are permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers. However, the Secondary A aquifers in the vicinity of the Site are understood from the BCL Water Resources and Hydrogeology Assessment to be mainly low permeability.

The Site is not located within a Groundwater Source Protection Zone.

2.3.3. Hydrology

The nearest identified surface water feature is the River Medina that is approximately 20m from the eastern boundary of the Site and flows in a general northerly direction.

2.3.4. Radon

Radon is a naturally occurring radioactive gas which may be harmful to human health. Radon is generally released into the atmosphere in areas underlain by granite and limestone. Harmful concentrations of radon may build up if it becomes trapped in an enclosed space such as a building. National Radiological Protection Board data presented within the Landmark Envirocheck Report indicates that the percentage of houses exceeding the Action Levels for Radon in this area is less than 1%.

Therefore, the British Geological Survey recommends that radon protection measures are not necessary in new dwellings or extensions.

2.4 ENVIRONMENTAL DATA SEARCH

A search of an environmental database was undertaken together with information from various other organisations as part of the desk study and is summarised in the following sections.

The following summary is generally limited to locations within 250m of the Site boundaries unless it is considered that installations or activities beyond that range could potentially have an impact on the Site or be affected by the redevelopment of the Site.

Table 2.1. Data search results

Discharge consents	There are 6no recorded discharge consents located within 250m of the Site. These relate to discharge of surface water, trade effluent and treated sewage effluent from industrial facilities to the northeast and east of the Site to the River Medina, downstream of the Site.
Pollution incidents	There are 2no recorded pollution incidents within 250m of the Site. These relate to minor incidents of diesel and waste oil release to the Medina Estuary in the early 1990s.
Water abstractions	There are no surface water or groundwater abstractions located within 1.25km of the Site.
Fuel Stations	There are no fuel station sites within 250m of the Site.
Landfill Sites	As mentioned in the Site history and Site description sections, a historical landfill is identified beneath the Site. The entries in the environmental data search indicate that the Site accepted construction, demolition, domestic, commercial and industrial waste.

The Site is located in an area which is not affected by coal mining. The following ground hazards were identified:

Compressible ground stability hazards – Moderate

Collapsible ground stability hazards – No Hazard

Ground dissolution stability hazards – No Hazard

Landslide ground stability hazard –Very Low

Shrinking or swelling clay ground stability hazard – Moderate

Running sand ground stability hazards – Low

2.5 DEPARTMENT OF ENVIRONMENT – INDUSTRY PROFILES

The Industry Profile ‘Waste recycling, treatment and disposal sites: landfills and other waste treatment or waste disposal sites’ produced by the Department of the Environment identifies the potential of the following containments to be found on the potential landfill area of the Site although their likelihood of being present in the ground is dependent on the material deposited within the landfill:

- Heavy metals and metal compounds
- PAHs
- Oil/fuel hydrocarbons
- PCBs
- Inorganic compounds (including sulphur and asbestos)

2.6 NOTICES OF MODIFICATION OF WASTE DISPOSAL LICENCE CONDITIONS

Two Notices of Modification of the Waste Disposal Licence for the refuse tip beneath the Site were obtained and presented within the PDE Risk Assessment report (see Appendix C).

The first dates from June 1979 and refers to changes to the licence granted in October 1977. The Notice states that the facility was licenced to accept up to 40 Tonnes of domestic and commercial waste (untreated), 5 Tonnes of non-hazardous industrial waste (potentially combustible), 5 Tonnes of non-hazardous industrial waste (inert and non-flammable) and 40 Tonnes of waste from the construction industry per day.

Other conditions in the notice include a requirement to not deposit further waste within 15m of the high water level on the west back of the River Medina and that the final layer deposited shall be to a depth not less than one metre and kept clear of materials likely to interfere with final restoration or subsequent cultivation. The finished level of the Site was also not to be higher than the level of the adjoining land to the west.

The second Notice dates from July 1990 and also refers to the original Waste Disposal Licence granted in October 1977. This Notice states that the landfill can receive solid, non-toxic soils, clays, rubbles, construction and demolition waste and semi-solid clean slurry from the ballast washing plant adjacent to the Site. The condition to not deposit waste within 15m of the high water level on the west bank of the River Medina is still present but an agreed plan for the finished Site levels is referred to in place of the reference to the level of the adjacent land.

2.7 CONSULTATION WITH REGULATORS

The production of this Preliminary Risk Assessment is largely based on the comments received from the regulatory authorities and their consultants following the previous submission of data with the planning application for the development.

2.7.1. Isle of Wight Council

Isle of Wight Council was also contacted by PDE in February 2012 for any information held in relation to land contamination associated with the Site. A response was received on the 10th February 2012 and stated that only patchy information was available and that the Council could not vouch for its accuracy. It also stated that waste regulation moved out of Council control in around 1996 and is now the responsibility of the Environment Agency (EA). Details of the relevant EA office were also provided.

2.7.2. Environment Agency

Following the response from the Isle of Wight Council, PDE contacted the EA with a similar request. The EA responded by email on the 1st March 2012 stating that the Isle of Wight Council issued a waste disposal licence for the tip on the 13th October 1977, which was modified in 1979 and 1990. The email goes on to state that no records of the waste tipped or the final date the site ceased accepting waste are available and that a lot of the file comprises large proposed final contour plans and permit administration correspondence. The EA also provided the copies of the modification notices discussed previously.

2.8 OUTLINE CONCEPTUAL SITE MODEL

On the basis of the above, a number of possible pollutant linkages have been identified at the Site, which are summarised in Table 2.2.

Table 2.2 Outline conceptual model

Source	Pathway	Receptor
Ground-gas potentially originating from underlying landfill and natural soils	Vertical migration of ground gas leading to accumulation in confined spaces and inhalation	Buildings on-site and future construction workers & occupiers/users of the Site
Landfill potentially containing hydrocarbons, heavy metals and inorganic compounds	Direct dermal contact	Construction workers
	Ingestion	Occupiers/users of the Site
	Inhalation	Occupiers/users of the Site
	Vertical migration	Secondary aquifer
Made ground potentially impacted with asbestos containing materials	Inhalation	River Medina and ecologically protected areas
		Construction workers
		Occupiers/users of the Site
		Occupiers/users of adjacent land
Soils potentially impacted with hydrocarbons, heavy metals and inorganic compounds as a result of the adjacent coal yard	Direct dermal contact	Construction workers
	Ingestion	Occupiers/users of the Site
	Inhalation	Occupiers/users of the Site

2.9 CONCLUSIONS OF PRELIMINARY RISK ASSESSMENT (PRA)

The preliminary risk assessment identified a number of possible pollutant linkages that required further investigation and assessment. Consequently, a generic quantitative risk assessment was undertaken, incorporating a geo-environmental and geotechnical site investigation designed to address the potential pollutant linkages identified in the outline conceptual model and compare the chemical analysis results with generic assessment criteria.

3. FIELDWORK SUMMARY OF SCOPE AND RATIONALE

3.1 PROPOSED INVESTIGATION STRATEGY

A proposed investigation strategy was prepared and issued to the regulators with a copy of the Preliminary Risk Assessment for review and comment in November 2012. The investigation strategy was accepted in principal and the following scope of works was undertaken in December 2012.

Subsequent to the completion of the investigation works, local residents have made representations to the Isle of Wight Council with regard to the proposed investigation strategy primarily querying the number of boreholes, the borehole spacing and the spatial distribution of the boreholes. The main concerns appear to relate to the majority the borehole locations being situated along the southern and eastern boundaries of the Site, adjacent to the River Medina, and the need for accurate positional records of the boreholes. The concerns stated are that a) contaminant concentrations decrease with increased distance from a central source of contamination and would therefore be lower towards the edges of the landfill and b) as the landfill was built on a former oyster bed with bunds to retain water, locating the boreholes through the bunds at the periphery of the Site would give unrepresentative samples.

The details of the investigation rationale are given below; however, the concerns raised by the residents can be addressed as follows:

The landfill as a whole is considered a potential source of contamination and an assumption of a central source of contamination within the landfill and decreasing concentrations towards the edges would not be consistent with the conceptual model of the Site. It is envisaged that mobile contamination within the heterogeneous waste mass will follow preferential migration pathways to the lowest elevation low permeability horizons within and beneath the landfill. Overall, this low horizon is likely to be the alluvial silt and clay base of the former oyster beds or the Headon and Osborne Beds, although pockets of contamination are also anticipated within the body of the waste due to the periodic clay capping of the waste during the latter stages of the landfill operation. Immobile contamination will obviously remain where it was placed.

As noted in the representations by the local residents, the bunds associated with the former oyster beds align with the southern and eastern most boundaries of the landfill (high water mark) and appear from historical maps to vary in width from approximately 4m to 15m.

It is also understood that a condition of the landfill license was a requirement to not deposit waste within 15m of the high water level on the west back of the River Medina. However, none of the boreholes have been located within this distance from the high water mark as the application boundary is approximately 20m from the high water level on the west back of the River Medina and all of the boreholes are within the Site. The boreholes have also been surveyed and their positions overlaid on the 1897 map of the Site to illustrate the relationship between the borehole locations and the former oyster beds and are presented as Figure 4.

3.2 RATIONALE AND SUMMARY OF SCOPE

Site investigation works were undertaken by Mayer Brown between the 3rd and 18th December 2012.

- 2no. windowless sample boreholes (BH101-102) to a maximum depth of 11.4mbgl drilled with a Geoprobe rig.
- 7no. windowless sample boreholes (BH103-109) to a maximum depth of 8.0mbgl drilled with a Terrier rig.
- 5no. cable percussive boreholes (BH1-5) to a maximum depth of 19.1mbgl.
- Collection of representative samples to undergo chemical laboratory testing as detailed in later sections of this report.
- Installation of 10no. gas / water monitoring standpipes.

Windowless sampling was considered to be the most appropriate at this stage for obtaining samples for contamination testing. The Geoprobe rig was initially selected as it allows a greater depth of investigation to be achieved than using a Terrier rig. However, due to soft surface ground conditions, the van mounted Geoprobe rig proved to be unsuitable and was replaced by the Terrier rig.

5no cable percussive boreholes were drilled along the eastern, western and southern boundaries of the Site, primarily for geotechnical purposes. This drilling technique is not considered to be suitable for obtaining reliable samples for chemical analysis due to the high risk of cross contamination, particularly when water is added to aid the drilling process, but it is considered to be the most appropriate technique for geotechnical testing and provided suitable conditions for the installation of ground gas and groundwater monitoring wells.

The rationale for the investigation is presented below in Table 3.1.

Table 3.1 Exploratory hole location rationale

Location	Rational	Max Depth (mbgl)
BH101-109	Windowless sample boreholes drilled on an approximate 60m regular grid non-targeted sampling pattern to assess the nature and stratigraphy of the subsurface materials across the Site and allow the collection of representative samples for chemical analysis. Installation of ground gas and water monitoring standpipes to allow for ground gas assessment where viable. Windowless sample boreholes were located in the vicinity of the cable percussive boreholes to allow a correlation between the soil sampling and the well installations in the cable percussive boreholes as the cable percussive boreholes were anticipated to be provide well installations to the required depths.	11.40
BH1-5	It was intended that these boreholes penetrate the Alluvium beneath the landfill and prove the bedrock geology of the Headon Beds and Osborne Beds to a sufficient thickness that they can be confirmed to be natural and not reworked deposits. The boreholes were installed with monitoring wells suitable for assessing the ground gas risks associated with the landfill waste and the underlying Alluvium and for assessing groundwater contamination in the vicinity of the River Medina at the anticipated deepest parts of the landfill.	19.1

BH1-3, BH102 and BH106-109 were located within the former oyster beds while BH101, BH103-105 and BH4-5 were installed within the area of the former slope between the former railway line to the west (now a cycle way) and the oyster beds.

The layout of the exploratory positions is presented in Figures 2 in relation to the current Site layout and in Figure 4 in relation to the 1897 Ordnance Survey map that identified the layout of the former oyster beds prior to the landfill.

3.3 MONITORING

Four monitoring return visits to the Site were considered appropriate to provide initial data for this assessment. The visits were undertaken on the 19th December 2012 and the 7th, 15th and 22nd January 2013, in accordance with the recommendations for gas risk assessment presented in CIRIA C665. Groundwater samples were also obtained during the first monitoring visit.

Additional groundwater level monitoring was undertaken of selected wells on the 17th December, during the investigation works, over a 7hr period to determine if there is a tidal influence on the groundwater beneath the Site.

3.4 SITE INVESTIGATION STANDARDS

Methods employed during the investigation were generally undertaken in accordance with BS10175 and BS5930.

4. GROUND CONDITIONS ENCOUNTERED

4.1 SOIL CONDITIONS

Ground conditions encountered during the recent ground investigation were broadly consistent with those identified in the published literature and comprised Made Ground (landfill waste material) locally over Alluvium over Headon Beds and Osborne Beds to the full depth of the investigation.

Variations in strata thicknesses are summarised in Table 4.1 below, engineering logs are presented in Appendix D.

Table 4.1 Summary of encountered ground conditions

Location	Made Ground		Alluvium		HBOB	
	From (mbgl)	Thickness (m)	From (mbgl)	Thickness (m)	From (mbgl)	Thickness (m)
BH1	GL	6.80	N/E		6.80	>4.80
BH2	GL	9.40	9.40	4.00	13.40	>2.80
BH3	GL	10.80	10.80	4.80	15.60	>3.50
BH4	GL	6.50	N/E		6.50	>3.70
BH5	GL	4.00	N/E		4.00	>3.20
BH101	GL	6.00	N/E		6.00	>2.00
BH102	GL	9.30	9.30	>2.10	N/E	
BH103	GL	7.50	N/E		7.50	>0.50
BH104	GL	4.10	N/E		4.10	>2.90
BH105	GL	4.20	N/E		4.20	>1.80
BH106	GL	6.00	N/E		6.00	>1.00
BH107	GL	>8.00	N/E		N/E	
BH108	GL	>8.00	N/E		N/E	
BH109	GL	>8.00	N/E		N/E	

GL = Ground Level

N/E = Not Encountered

4.1.1. Made Ground/Landfill Waste

All boreholes were drilled through the waste of the underlying landfill, which varied in thickness from approximately 4.0m in the southwest to approximately 10.8m in the northeast. The landfill predominantly comprised a gravelly clay matrix with bands of sandy ash and clinker gravel and frequent anthropogenic inclusions including concrete, brick, plastic sheeting, asbestos cement sheeting, timber, glass and metal.

In general, more clay was encountered in the upper parts of the waste than the lower parts, which is consistent with the understanding from the landfill license conditions (1977) that the waste be covered with a layer of non-putrescible or stabilised material throughout the working period each day and that the final capping layer be not less than 1.0m deep and be free from materials likely to interfere with final restoration or subsequent cultivation. The observed clay is likely to have been used for both these purposes but is less likely to have been used in the older, deeper parts of the landfill.

BH107-109 were terminated within this material at the practical limit of the Terrier windowless sampler rig.

4.1.2. Alluvium

Alluvium, comprising very soft grey silty clay, was encountered directly beneath the waste material in BH102, BH2 and BH3, which were situated in the area of the main former oyster bed. This Alluvium had a maximum recorded thickness of 4.8m in BH3 in the northeast of the Site.

BH102 was terminated within this material at the practical limit of the Geoprobe windowless sampler rig.

4.1.3. Headon Beds and Osborne Beds

Headon Beds and Osborne Beds, comprising firm to stiff light grey mottled orange brown slightly silty clay with small shell fragments, were encountered directly beneath the waste in the southern and western boreholes and directly beneath the Alluvium in the north and eastern boreholes. Limestone was encountered within this material at 11.6mbgl in BH1. This material formed the basal layer for the majority of boreholes with a maximum proven thickness of 4.0mbgl. The full thickness of the stratum was not proven.

In the southwest of the Site, the profile of the upper surface of the Headon Beds and Osborne Beds appears to follow the former slope between the former railway line to the west of the Site and the former oyster beds in the east and in the northeast of the Site follows the river channel beneath the former oyster beds and the Alluvium, sloping down towards the north.

BH1 and BH106 appear from Figure 4 to be located within the southernmost former oyster bed. However, both of these boreholes encountered the Headon Beds and Osborne Beds directly beneath the waste with no identified Alluvium. It is therefore considered likely that the conditions encountered are representative of the base of the former slope or what appears to be a former access track along the edge of the former oyster beds.

4.2 OBSTRUCTIONS

No obstructions were encountered during the drilling of the boreholes on this Site.

4.3 GROUNDWATER CONDITIONS

4.3.1. During Investigation

Groundwater was encountered at 11.6mbgl (-3.57mAOD) and 7.7mbgl (0.43mAOD) in BH1 and BH3, respectively, during the site investigation. The groundwater ingress in BH1 was associated with striking limestone at 11.6mbgl with the water rising to 8.8mbgl (-0.77mAOD) after 20mins.

The groundwater ingress in BH3 coincided with a layer of sandy ash and clinker gravel overlying the alluvial clay and rose to 6.5mbgl (1.63mAOD) after 20mins. This groundwater was cased off as part of the drilling technique as the borehole progressed into the underlying Alluvium and Headon Beds and Osborne Beds and the borehole remained dry to the termination of the borehole at 19.1mbgl (-10.97mAOD).

Notable groundwater was not encountered within the Alluvium or Headon Beds and Osborne Beds in any of the other boreholes. This indicates that locally, with the exception of the limestone encountered in BH1, despite being officially classified as Secondary Aquifers, the Alluvium and Headon Beds and Osborne Beds in the vicinity of the Site can be considered to be effectively unproductive strata and are unlikely to allow significant groundwater migration. Moreover, the 4.8m of recorded clay overlying the limestone in BH1 is considered to act as an effective aquiclude between the limestone and the landfill.

4.3.2. Tidal Monitoring

Monitoring of four boreholes (BH1, BH2, BH101 and BH102) over an approximate 7hr period (08:50hrs to 15:40hrs) on the 17th December 2012, during the site investigation, showed no change in groundwater levels with tidal variation. This indicates that the groundwater beneath the Site is not tidally influenced and is unlikely to be in significant hydraulic continuity with the River Medina.

This is likely to be largely to do with the former oyster bed bunds continuing to prevent significant water movement between the landfill and the River, with an additional influence of the 15m of non-waste fill material (likely to be clay) placed between the waste and the River during the construction of the landfill.

Note: Low water on this date at Cowes was predicted to be at a level of -1.99mAOD at 07:04hrs and high water was predicted to be at a level of 1.81mAOD at 13:56hrs.

Although the monitoring period did not cover a complete tidal cycle, it is considered to have covered a sufficient portion of the cycle, spanning the high water level, to have identified a tidal influence on the groundwater beneath the Site.

4.3.3. Groundwater Monitoring

Groundwater was recorded during the monitoring rounds at variable depths across the Site but generally appears to follow the profile of the upper surface of the Headon Beds and Osborne Beds in the southwest of the Site.

Water levels in BH101, BH103-105 and BH4-5 varied between 0.05m and 1.42m above the upper surface of the Headon Beds and Osborne Beds with variations within each well over the four monitoring rounds of between 0.02m and 0.38m. Notably, the highest and lowest variations in groundwater levels within individual boreholes over the four monitoring rounds were recorded in adjacent boreholes BH5 (0.38m variation) and BH105 (0.02m variation), BH105 being located approximately 15m to the east of BH5 in the southwest corner of the Site. This appears to be more consistent with pockets of perched water retained above the low permeability natural strata rather than a consistent flowing water body within the waste, particularly as BH103, towards the centre of the Site was recorded to be dry throughout the four monitoring rounds.

The groundwater levels in BH2 and BH3 in the northeast of the Site are relatively consistent over the monitoring period with variations of 0.06m and 0.05m, respectively over the four monitoring rounds and are likely to be in continuity with each other and retained above the low permeability Alluvium in the former oyster beds. These monitored groundwater levels are also broadly consistent with the water strike during the drilling of BH3. As BH2 and BH3 appear to be in hydraulic continuity with minimal variation in groundwater levels over the monitoring period, it is reasonable to conclude that BH3 is also not tidally influenced.

During the tidal monitoring undertaken on the 17th December 2012 and the first round of water monitoring following the completion of the investigation the groundwater levels in BH1 were recorded to be 2.00mAOD and 2.02mAOD, respectively, with no measurable tidal variation. The subsequent three monitoring rounds recorded groundwater levels in this well of between 1.17mAOD and 1.29mAOD. The groundwater monitored in this well therefore does not appear to be in significant hydraulic continuity with that monitored in BH2 and BH3, which is consistent with the apparent bund shown between the oyster beds on the 1897 map and as BH1 appears from the ground conditions encountered to be outside of the southern oyster bed. The monitored groundwater levels in BH1 also appear to be generally below the upper boundary of the Headon Beds and Osborne Beds. This data indicates that the groundwater levels in BH1 are likely to be primarily governed by variations in the water level in the limestone encountered at the base of the borehole rather than being in consistent continuity with the other groundwater bodies within the landfill or the River Medina.

The data do not indicate an obvious groundwater flow direction across the Site although mobile water within the landfill is likely to eventually migrate towards the former oyster bed basins in the north and east of the Site.

4.4 VISUAL / OLFACTORY EVIDENCE OF CONTAMINATION

Ash and clinker sand and gravel were noted throughout the landfill waste. Localised fragments of asbestos cement sheeting were also observed within the body of the waste and on the ground surface. Localised swarf fragments were also observed within the body of the waste, which are often accompanied with oil when disposed of, although evidence of oil with the swarf was only observed at approximately 9.0mbgl in BH102 and between 2.5mbgl and 2.9mbgl in BH107.

4.5 GROUND GAS

A ground gas assessment for the Site was conducted as part of the scope of works, involving four rounds of ground gas monitoring of the installed wells, in accordance with the recommendations of CIRIA C665.

5. GENERIC RISK ASSESSEMNT

5.1 CONTAMINATION ASSESSMENT METHODOLOGY

In order to assess the human health and environmental risks posed by potential contaminants within the underlying soils and groundwater, Mayer Brown undertook an initial screen of the laboratory results using generic assessment criteria. Generic assessment criteria (GAC) are contaminant concentration values used for comparison purposes to assess the risk associated with contaminant concentrations found on site and are derived using non-site-specific information.

5.1.1. Soils

In order to assess the soil analyses results with regard to potential human health risks, Mayer Brown have adopted generic assessment criteria derived in accordance with the UK framework set out in the most recent CLR (Contaminated Land Report) documents. Ongoing research by the EA is being undertaken to produce toxicology reports (TOX series) for each of the contaminants identified within the CLR framework and then to produce published Soil Guideline Values (SGVs) using the Contaminated Land Exposure Assessment (CLEA) Model.

To date, SGVs have been published for only a limited suite of contaminants, with SGVs derived for each contaminant for three different land use scenarios namely:

- residential;
- allotments; and
- commercial and industrial.

Where available, published Soil Guideline Values (SGV) have been adopted. Where SGVs are not available, Mayer brown has adopted the generic assessment criteria published by LQM/CIEH (second edition) and EIC/AGS/CL:AIRE, generated using the CLEA v1.06 software and associated handbook. As further guidance is developed, it would be appropriate to review the Tier 1 screening process.

A full list of the GACs together with an indication of the method used for their derivation is provided in Appendix E. GACs applicable to commercial/industrial end use have been used for the assessment of the Site. Contaminant concentrations below the GACs are considered not to warrant further risk assessment. However, concentrations of contaminants above the GACs may require further consideration through statistical analysis, if appropriate, or further detailed assessment using site specific data.

Assessment framework

In regards to human health, the CLEA model states that, 'the contamination is assumed to be at or within 1m of the surface' (CLR10 pg10). It is considered that at depths greater than 1m, the probability of human exposure via the direct contact pathways are significantly reduced, leaving inhalation of volatile compounds as the dominant pathway with regard to human health risks. Typically, volatile compounds only significantly affect the indoor inhalation pathway. Therefore, for the purposes of statistical analysis, data from the top 1.0 to 1.5m is used for assessment of risks to human health via direct contact pathways in accordance with the CLEA model, dependant on proposed future Site levels.

Statistical analysis

The CLEA guidelines state that for each contaminant, the upper 95th percentile confidence limit on the mean measured concentration (95%UCL) should be calculated and this value should be compared to the GAC. Maximum value tests should also be performed in accordance with the method outlined in Annex 1 of CLR7.

The objective of these tests is to decide whether the maximum concentration observed should be treated as an outlier or whether it can reasonably be considered to come from the same underlying population as the other samples.

Annex 1 of CLR 7 describes a simplistic method for calculation of the 95%UCL value based on the arithmetic mean of the sample distribution, assuming the contaminant concentrations fall within a normal distribution. However, it is known that contaminant concentrations often tend towards other distribution forms.

Therefore, in order to calculate what are considered to be more representative 95%UCL values, the contaminant concentrations have first been assessed to determine if each contaminant distribution is closer to a normal or another distribution. If a dataset was found to be normally distributed, the arithmetic mean was used to calculate the 95%UCL using the 'One sample t-test' as described in CLR 7. If the distribution was determined to be significantly removed from normal, the one-sided Chebychev Theorem was used to calculate the 95%UCL. Constituent non-detects were assigned a value equal to the reported analytical laboratory limit of detection, considered reasonably conservative in accordance with CLR principles. Any identified outliers are excluded from the datasets used in calculation of the 95%UCL value, with justification.

5.1.2. Groundwater

Groundwater analyses, where undertaken, shall be assessed by direct comparison with the freshwater Environmental Quality Standards (EQS), or, in the absence of EQSs, UK or WHO Drinking Water Standards or other appropriate guidance values. For certain compounds, the EQS is quoted as a range of values based on the alkalinity of the water, where the measured concentration lies within this range, the results are interpreted qualitatively. The guideline values selected as appropriate GACs for each contaminant are presented in Appendix E.

5.1.3. Leachate

Leachate analyses, where undertaken, shall be assessed in the same manner as the groundwater samples. The guideline values selected as appropriate GACs for each contaminant are presented in Appendix E.

5.1.4. Ground gas

The criteria used to assess the ground gas monitoring results, where monitored, have been taken from the following guidance documents:

- Assessing risks posed by ground gases to buildings, CIRIA Report C665, 2007
- Code of practice for the characterisation and remediation from ground gas in affected developments, British Standard BS 8485, 2007

The values recorded at the Site have been compared to guideline values given in CIRIA Report C665, (2007) 'Assessing risks posed by ground gases to buildings'.

The frequency and period of monitoring is assessed based on the gas generation potential of the source material and the sensitivity of the development, in accordance with Table 5.5 of CIRIA C665.

These typical monitoring recommendations vary between four sets of readings over a one month period for a commercial development and a very low generation potential source to 24 rounds over 24 months for a residential property and a very high generation potential source. However, these are recognised as typical recommendations that may require fewer or additional readings depending on Site specific circumstances.

Where possible, monitoring rounds are undertaken during a range of atmospheric conditions to enable their influence on gas conditions to be assessed. As monitoring over the recommended periods is frequently impractical on development sites, the monitoring rounds undertaken are conducted during the worst case conditions (e.g. low and falling atmospheric pressure) during the time available, as far as reasonably practicable, in order to limit the level of uncertainty resulting from the reduced monitoring period. It may, however, be appropriate to raise the Characteristic Situation to account for uncertainties on a site by site basis.

The Characteristic Situation for a monitoring location is determined using the worst case gas screening value for methane or carbon dioxide from all of the monitoring rounds at that location. Following the precautionary principal, the most stringent of the Characteristic Situations for the monitoring locations within the Site is generally used to classify the Site as a whole.

5.2 SOIL ASSESSMENT

5.2.1. General

A total of 9no. near surface soil samples collected during the site investigation were submitted to a UKAS accredited laboratory for analysis for a suite of heavy metals, phytotoxic metals (harmful to plants), phenols, speciated polyaromatic hydrocarbons (PAHs), fractionated total petroleum hydrocarbons (TPH), BTEX compounds and several inorganic parameters. An additional sample of suspected asbestos containing material was also submitted for asbestos analysis only. The results of the laboratory analyses are summarised in Appendix F, in which they are compared to the relevant generic assessment criteria. A full set of all the laboratory test certificates is presented as Appendix G.

The range of potentially hazardous contaminants present on the Site can be wide and varied and the suite has been chosen to reflect both commonly found contaminants and others indicated by research to have a significant risk of being present. It is, however, possible that others may exist for which analyses have not been carried out or which were outside the scope of completed exploratory holes.

The decision to recommend acceptability or a requirement for remediation is based on the evaluation of a number of factors which when combined present a statutory or non-statutory risk that may require remedial action.

5.2.2. Heavy metals

The majority of the heavy metals included in the analysis of the near surface samples recovered from boreholes constructed across the Site were identified at concentrations well below the relevant GACs. However, a single substantially elevated concentration of nickel was identified in the samples from 0.5mbgl in BH105. There was no obvious source of the nickel impact in the Made Ground although it appears to be localised to BH105. BH105 and the surrounding area is proposed to be covered by a new earth bund. Therefore nickel and heavy metals in general are not considered to represent a significant source of contamination with regard to human health.

Arsenic and locally antimony and chromium were also identified at concentrations above the Water Regulations Advisory Scheme material selection threshold levels for buried services in several of the near surface Made Ground samples across the Site. Arsenic, antimony and chromium are therefore considered to represent a significant source of contamination with regard to buried services.

5.2.3. Phytotoxic metals

The phytotoxic metals included in the soil analysis were identified at concentrations well below the relevant GACs in all of the soil samples recovered from boreholes constructed across the Site. Therefore phytotoxic metals are not considered to represent a significant source of contamination with regard to human health.

5.2.4. Petroleum hydrocarbons

Total petroleum hydrocarbon (TPH) concentrations recorded in near surface soil samples recovered from boreholes constructed across the Site were below relevant GACs in all of the soil samples analysed. Therefore, TPH is not considered to represent a significant source of contamination with regard to human health receptors.

However, concentrations of TPH exceed the Water Regulations Advisory Scheme material selection threshold levels for buried services in all but two of the near surface soil samples from across the Site. TPH is therefore considered to represent a significant source of contamination to any proposed buried services.

5.2.5. Polyaromatic hydrocarbons (PAHs)

Polyaromatic hydrocarbons (PAHs) concentrations recorded in soil samples recovered from boreholes constructed across the Site were below the relevant GAC. Therefore, PAH is not considered to represent a significant source of contamination with regard to human health receptors.

Total PAH concentrations also did not exceed the Water Regulations Advisory Scheme material selection threshold levels for buried services. PAHs are therefore not considered to represent a significant source of contamination with regard to buried services.

5.2.6. BTEX compounds and MTBE

Concentrations of BTEX compounds in soil samples recovered from boreholes across the Site are well below relevant GACs. Therefore, BTEX compounds and MTBE are not considered to represent a significant source of contamination with regard to human health.

5.2.7. Inorganics

The concentrations of free cyanide fell below laboratory detection limits in all of the soil samples analysed.

The pH of all of the soil samples analysed was within the natural 5-9 range.

Asbestos containing materials (Chrysotile and Amosite fibres) were identified within two of the soil samples recovered and analysed and fragments of asbestos cement sheeting were observed within the body of the landfill waste and on the Site surface. The sample of fibrous insulation from 3.6mbgl in BH108 that was sampled separately was identified to contain non-asbestos fibres. It is likely that the asbestos containing material present was deposited as part of the landfill operation. It is therefore likely that additional asbestos containing materials could be encountered during the development of the Site. Asbestos containing materials are therefore considered to represent a significant source of contamination with regard to human health.

5.3 LEACHATE ASSESSMENT

5.3.1. General

A total of 13no. samples of the landfill waste, 1no. sample of the Alluvium and 4no. samples of the Headon Beds and Osborne Beds collected during the site investigation were also analysed for a suite of heavy metals, phytotoxic metals (harmful to plants), phenols, speciated polycyclic aromatic hydrocarbons (PAHs), fractionated total petroleum hydrocarbons (TPH), BTEX compounds and several inorganic parameters. The results of the laboratory analyses are summarised in Appendix F, in which they are compared to the relevant generic assessment criteria. A full set of all the laboratory test certificates is presented as Appendix G.

5.3.2. Heavy metals

The majority of the heavy metals included in the analysis of the samples analysed were identified at concentrations well below the relevant GACs. However, significantly elevated barium concentrations were identified in 8no. of the leachate samples from the landfill waste and in the sample of Alluvium (9.3-11.4mbgl in BH102). An isolated elevated nickel concentrations was also identified in the landfill waste sample from 2.5-2.9mbgl in BH107. The sample of the Alluvium also contained significantly elevated concentrations of arsenic, mercury and selenium, above the relevant GACs. The samples from the Headon Beds and Osborne Beds did not show any significantly elevated heavy metal concentrations.

These results indicate a greater number of elevated heavy metal concentrations in the Alluvium sample than in any of the samples of landfill waste material. This is considered to be either the result of the majority of the heavy metals already having leached out of the waste into the surface of the Alluvium, which is not considered likely given the tendency of water to become perched within the landfill rather than flowing through it, or that these contaminants were present in the Alluvium prior to the landfilling of the Site.

It is understood from historical sources referred to in correspondence with the Isle of Wight Council as *County Press 22nd November 1913 page 5 Cowes Harbour Commissioner* (although not confirmed by Mayer Brown) that the River Medina was condemned and all oyster fishing prohibited due to the oysters being unfit for human consumption. It is possible that these elevated heavy metal concentrations in the Alluvium contributed to the oysters being condemned as unfit for human consumption. If this is the case, it is likely that the Alluvium to the east of the Site, outside of the former oyster bed bunds, also contains elevated concentrations of these metals from the same time period.

Based on the limited uses of barium, it is considered likely that the barium concentrations present in the samples of landfill waste are the result of the use of rat poisons on the landfill, although no records have been identified confirming the use of barium based rat poisons on Site.

Therefore heavy metals are considered to represent a significant source of contamination with regard to environmental receptors.

5.3.3. Phytotoxic metals

The phytotoxic metals included in the soil analysis were identified at concentrations well below the relevant GACs in the majority of the samples analysed. However, concentrations of boron, slightly in excess of the relevant GAC were recorded in two of the landfill waste samples and in the Alluvium sample. Therefore phytotoxic metals are not considered to represent a significant source of contamination with regard to environmental receptors.

5.3.4. Petroleum hydrocarbons

Total petroleum hydrocarbon (TPH) concentrations recorded in the samples analysed were generally below relevant GACs with the majority also below laboratory detection limits. However, a single concentration of EC12-16 range aromatic hydrocarbons was identified to be slightly above the relevant GAC in a sample that corresponded with evidence of oil and swarf during the investigation. Therefore, TPH is not considered to represent a significant source of contamination with regard to environmental receptors.

5.3.5. Polyaromatic hydrocarbons (PAHs)

Polyaromatic hydrocarbons (PAHs) concentrations recorded in the samples were marginally above the relevant GACs for several PAHs. These concentrations are representative of the more mobile PAH compounds and were present in the majority of landfill waste samples, the Alluvium sample and one of the samples from the Headon Beds and Osborne Beds. However, as these exceedances are only marginal, PAHs are not considered to represent a significant source of contamination with regard to environmental receptors.

5.3.6. BTEX compounds and MTBE

Concentrations of BTEX compounds in the samples analysed were well below relevant GACs. Therefore, BTEX compounds and MTBE are not considered to represent a significant source of contamination with regard to environmental receptors.

5.3.7. Inorganics

Sulphate concentrations were substantially elevated in the samples from 3.8-8.0mbgl in BH107 and 1.1-6.0mbgl in BH108.

Ammonia as NH₄ was identified in excess of the relevant GAC in all of the landfill waste samples and the Alluvium sample.

Sulphate and ammonia are therefore considered to represent significant sources of contamination in relation to environmental receptors.

5.4 GROUNDWATER ASSESSMENT

5.4.1. General

A total of 6no. groundwater samples collected during the first monitoring round were analysed for a suite of heavy metals, phytotoxic metals (harmful to plants), phenols, speciated polyaromatic hydrocarbons (PAHs), fractionated total petroleum hydrocarbons (TPH), BTEX compounds and several inorganic parameters. The results of the laboratory analyses are summarised in Appendix F, in which they are compared to the relevant generic assessment criteria. A full set of all the laboratory test certificates is presented as Appendix G.

5.4.2. Heavy metals

The majority of the heavy metals included in the analysis of the samples analysed were identified at concentrations well below the relevant GACs. However, elevated barium concentrations were identified in the samples from BH1, BH2, BH3 and BH5, marginally elevated concentrations of mercury were identified in BH3 and BH104 and a marginally elevated concentration of selenium was identified in BH1. As the concentrations of mercury and selenium only slightly exceed the GACs these heavy metals are not considered to represent a significant source of contamination with regard to environmental receptors. However, barium is considered to represent a significant source of contamination with regard to environmental receptors.

5.4.3. Phytotoxic metals

The majority of the phytotoxic metals included in the analysis of the samples analysed were identified at concentrations well below the relevant GACs. However, elevated boron concentrations were identified in the samples from BH1 and BH3. Boron is therefore considered to represent a significant source of contamination with regard to environmental receptors.

5.4.4. Petroleum hydrocarbons

Highly elevated petroleum hydrocarbon (TPH) concentrations were recorded in the sample from BH4 with lower but substantially elevated concentrations also identified in the other five samples above the relevant GACs. These impacts predominantly comprise long chain, comparatively viscous, EC21-35 aliphatic and EC16-35 aromatic fractions. It appears that the majority of the volatile fractions were either not present initially in the hydrocarbons on Site or have degraded.

No obvious sources of this TPH contamination were noted in the soil and leachate analysis results although it is likely from the observations during the site investigation that at least a proportion of the TPH present in the groundwater is the result of oil associated with the swarf deposits in the landfill. The highly elevated TPH concentration in BH4 is considered to be in large part the result of the hydrocarbons present being dissolved in a relatively small quantity of perched groundwater rather than necessarily denoting a more significant source of contamination than the other impacts on Site. The samples in from BH2 and BH3 are considered to be the only samples representative of a substantial groundwater body within the landfill.

Therefore, the TPH impact present beneath the Site, particularly represented by BH2 and BH3, is considered to represent a significant source of contamination with regard to environmental receptors.

5.4.5. Polyaromatic hydrocarbons (PAHs)

Polyaromatic hydrocarbons (PAHs) concentrations were recorded in all of the samples above the relevant GACs for several PAHs with the highest concentrations present in the samples from BH2 and BH3. These elevated PAH concentrations are therefore considered to be associated with the TPH impacts and should be considered and assessed as such. Therefore, PAHs are also considered to represent a significant source of contamination with regard to environmental receptors.

5.4.6. BTEX compounds and MTBE

Concentrations of BTEX compounds in the samples analysed were below the limits of detection and well below relevant GACs. Therefore, BTEX compounds and MTBE are not considered to represent a significant source of contamination with regard to environmental receptors.

5.4.7. Inorganics

Sulphate concentrations were elevated in the samples from BH3, BH4 and BH104. This indicates that elevated sulphate concentrations are present on Site that could present a minor source of contamination with regard to environmental receptors.

Ammonia as NH₄ was also identified at elevated concentrations above the relevant GAC in all of the samples analysed with the highest concentrations identified in BH2 and BH3.

Sulphate and ammonia are therefore considered to represent a significant source of contamination with regard to environmental receptors.

5.5 GROUND-GAS ASSESSMENT

The presence and concentrations of ground gases in the installed monitoring wells were monitored in accordance with CIRIA C665 on four occasions between the 19th December 2012 and 22nd January 2013 by Mayer Brown Ltd. The monitoring results are presented in Appendix H.

During all four gas monitoring rounds, steady state flow rates of <0.1/hr were recorded in all wells.

Elevated concentrations of carbon dioxide, up to 17.1% by volume, and flammable gas as methane, at a steady state of up to 27.6% by volume, were detected in the wells installed during the Mayer Brown investigation.

The recorded concentrations and flow rates for the Site indicate a classification of Characteristic Situation 2 (low risk) for the Site is an appropriate classification, based on the data available. This characterisation is based on the concentrations of both carbon dioxide and flammable gas as methane generally exceeding the recommended additional factors/typical maximum concentrations in CIRIA C665 in eight of the ten wells although the Gas Screening Values (GSVs) fell well below the boundary between Characteristic 1 and 2 at all locations.

It is noted that four rounds over a one month period have been undertaken, which is the recommended monitoring programme for a low sensitivity (commercial) end use on a site with a very low gas generation potential and that this Site would not be classed as being of very low gas generating potential.

However, as at least one monitoring round has been undertaken during low and falling atmospheric pressure conditions and as no measurable gas flow rates have been recorded during any of the monitoring rounds, it is considered highly unlikely that a sufficient gas flow rate and increase in measured concentrations would be recorded during longer term monitoring to warrant increasing the classification of the gas regime from Characteristic Situation 2 to 3.

In addition, the only buildings proposed on the Site are portacabin style structures that are considered to be protected from ground gas by design (i.e. being raised above the ground).

It is therefore considered that further monitoring will not provide any significant additional data that would alter the proposed design of the development. Further monitoring is therefore not recommended to support the proposed development.

6. CONCEPTUAL SITE MODEL

The proposed development for the Site is an asphalt plant together with associated ancillary facilities including: mobile cold recycling plant, mobile crusher, weighbridges, portacabin offices, lorry park, storage bays, workshop, access and use of the existing wharf.

The intention is to re-grade the surface of the old landfill site to form appropriate falls to control surface water and then 'cap off' using primary/recycled aggregates, topped with asphalt or concrete.

Screening bunds are proposed to be located on the eastern, southern and western boundaries along with shrub and tree planting. It is currently intended that approximately one third of the material to form the bunds would be obtained from the re-grading of the Site, provided the recovered material is suitable for use.

6.1 SOURCES

The outline conceptual model, formed from the results of the preliminary risk assessment, highlighted several potential contaminant sources relating to the past and present uses of the Site. The results of the site investigation and chemical result screening have allowed these potential sources to be characterised and refined. The following identifies the contaminant impacts considered to be present as a result of the works undertaken to this stage.

6.1.1. On-Site – Historic and Current

- Asbestos containing materials within the near surface landfill material, with regard to human health receptors.
- Ground gases (methane and carbon dioxide) generated from the landfill material and natural material beneath the Site, with regard to human health receptors.
- Barium, nickel, sulphate and ammonia within the landfill material, with regard to environmental receptors.
- Barium, mercury, arsenic, selenium and ammonia within the Alluvium, with regard to environmental receptors.
- Barium, boron, TPH and PAH impact to groundwater, with regard to environmental receptors.

- Reduced quality near surface landfill material slightly impacted with TPH, antimony, arsenic and chromium, with regard to buried services.

It should be noted that additional sources of contamination may become apparent during the development of the Site.

6.1.2. Off-Site – Historic and Current

- None.

6.2 PATHWAYS

The key environmental pathways and exposure routes by which potentially toxic substances can reach the identified potential receptors are considered to be:

6.2.1. Indirect

- Accumulation of vapours/gases in enclosed spaces.
- Lateral migration of leachate to surface water.

6.2.2. Direct

- Direct contact.
- Ingestion.
- Inhalation of contaminated dust.
- Inhalation of ground-gas.
- Inhalation of fibres.

6.3 RECEPTORS

Receptors that may be affected by the potential contamination are:

6.3.1. Human

- Future construction workers and occupiers/users of the Site.
- Users of adjacent land and River.

6.3.2. Environmental

- New buried services.
- River Medina and associated mudflats, including ecological designations.

6.4 RISK ASSESSMENT PROCEDURE

By considering the sources, pathways and receptors (pollutant linkages), an assessment of the human health/ environmental risks is made with reference to the significance and degree of the risk. This assessment is based on consideration of whether the source contamination can reach a receptor and hence whether it is of major or minor significance.

The risk assessment has been undertaken with reference to BS10175:2001 and CIRIA Document C552: Contaminated Land Risk assessment 'A Guide to Good Practice'.

The risk assessment has been carried out by assessing the severity of the potential consequence, taking into account both the potential magnitude of the hazard and the sensitivity of the target, based on the categories given overleaf.

Table 6.1 Sensitivity of receptor

Category	Examples
High	Residential with gardens/Groundwater Source Protection Zone
Medium	Residential without gardens/Principal (Major) Aquifer/sensitive watercourse
Low	Commercial and industrial use/Secondary (Minor) Aquifer
Very Low	Construction and maintenance workers/non-sensitive watercourse

Table 6.2 Magnitude of impact

Category	Examples
Gross Impact	Heavily contaminated gasworks or industrial site, hazardous waste landfill
Moderate Impact	Major leaks and spills from fuel infrastructure (e.g. petrol stations), domestic waste landfill
Slight Impact	Minor leaks and spills from fuel infrastructure, 'inert' waste landfills
No Impact	No identified or suspected contamination

Table 6.3 Level of severity for potential hazard

	Sensitivity of receptor			
Magnitude of Impact	High	Medium	Low	Very Low
Gross Impact	Severe	Medium	Mild	Minor
Moderate Impact	Medium	Mild	Minor	Minor
Slight Impact	Mild	Minor	Minor	Minor
No Impact	Minor	Minor	Minor	Minor

The likelihood of an event (probability) takes into account both the presence of the hazard and target and the integrity of the pathway and has been assessed based on the categories given below.

Table 6.4 Probability of risk definition

Category	Definition
High likelihood	Pollutant linkage may be present, and risk is almost certain to occur in long term, or there is evidence of harm to the receptor
Likely	Pollutant linkage may be present, and it is probable that the risk will occur over the long term
Low likelihood	Pollutant linkage may be present, and there is a possibility of the risk occurring, although there is no certainty that it will do so
Unlikely	Pollutant linkage may be present, but the circumstances under which harm would occur are improbable

The potential severity of the risk and the probability of the risk occurring have been combined in accordance with the following matrix in order to give a level of risk for each potential hazard.

Table 6.5 Level of risk for potential hazard definition

Probability of risk	Potential severity			
	Severe	Medium	Mild	Minor
High Likelihood	Very high	High	Moderate	Low/ Moderate
Likely	High	Moderate	Low/ Moderate	Low
Low likelihood	Moderate	Low/ Moderate	Low	Very low
Unlikely	Low/ Moderate	Low	Very low	Very low

The assessment is discussed below in terms of plausible pollutant linkages. A complete assessment of the pollutant linkages is presented in Table 6.6 overleaf.

A description of these risk classifications and likely action required are given in CIRIA 552 as:

Very high risk – High probability that severe harm could arise to a designated receptor from an identified hazard OR there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in substantial liability. Urgent investigation and remediation are likely to be required.

High risk – Harm is likely to arise to a designated receptor from an identified hazard. This risk, if realised, is likely to result in substantial liability. Urgent investigation is required and remedial works may be necessary in the short term and are likely over the long term.

Moderate risk – It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation is normally required to clarify risks and to determine potential liability. Some remedial works may be required in the long term.

Low risk – It is possible that harm could arise to a designated receptor from an identified hazard but it is likely that this harm, if realised, would at worst normally be mild.

Very low risk – It is a low possibility that harm could arise to a designated receptor. In the event of such harm being realised it is not likely to be severe.

.

Table 6.6 Pollutant Linkage Assessment

Source	Pathway	Receptor	Severity	Likelihood	Risk Level
Ground-gas originating from underlying landfill material and natural strata	Vertical migration of ground gas leading to accumulation in confined spaces and inhalation	Portacabin buildings on-site and future construction workers & occupiers/users of the Site	Medium	Unlikely	Low
Landfill material impacted with asbestos containing materials	Inhalation of fibres	Construction workers	Medium	Likely	Moderate
		Future Site users	Medium	Unlikely	Low
		Adjacent land and water users	Medium	Unlikely	Low
Landfill material impacted with heavy metals and inorganic compounds	Vertical migration of leachate and lateral migration of groundwater leading to direct contact	River Medina and ecologically protected areas	Minor	Unlikely	Very Low
Heavy metal and hydrocarbon impact to groundwater within landfill	Direct contact Ingestion Inhalation	River Medina and ecologically protected areas	Mild	Unlikely	Very Low
Shallow landfill material impacted with hydrocarbons and heavy metals	Direct contact	Buried Services	Minor	Likely	Low

6.5 POLLUTANT LINKAGE DISCUSSION AND MITIGATION MEASURES

6.5.1. Ground gas

The assessment of the Site has indicated that a Characteristic Situation 2 classification is appropriate for the Site with gas protection measures usually recommended for new developments. However, as the Site is proposed for industrial use and it is understood that the proposed buildings will be of a portacabin style, the buildings are considered to be suitably removed from the ground gas risk by being raised above the ground. No additional gas protection measures are therefore recommended. However, if any additional enclosed spaces are included in the development, they will require ventilation and gas protection measures.

6.5.2. Asbestos containing materials

It is understood that the proposed development will be surrounded by earth bunds with approximately one third of the material for these bunds being Site won. It is also understood that the remainder of the Site will be surfaced with asphalt or concrete. Any Site won material reused in the construction of the proposed bunds and redevelopment of the Site should be handled in controlled conditions and capped following placement and any of the present Site material exposed during the redevelopment should be capped during the redevelopment to prevent the release of asbestos fibres. It is recommended that the Site won material used in the bunds is segregated from the unimpacted imported material by a membrane to prevent contamination of the imported material and, where possible, is encapsulated within the unimpacted imported material.

Appropriate PPE should be worn by Site workers during ground works and appropriate measures should be put in place during the development to prevent asbestos fibres from becoming airborne and migrating off Site.

It is envisaged that the development of the Site with hard standing and incorporation of these recommendations will decrease the risks associated with the pollutant linkage between the asbestos on Site and the adjacent land and water users from the conditions that currently exist on Site.

6.5.3. Hydrocarbon and heavy metal impact to groundwater

A significant TPH and PAH impact with barium and boron is present beneath the Site, particularly within the groundwater body represented by BH2 and BH3, that could represent a significant source of contamination with regard to environmental receptors such as the River Medina.

However, it is apparent from the monitoring data discussed previously in this document that there is no significant hydraulic continuity between the groundwater monitored within the landfill beneath the Site and the River Medina. This is considered to be due in large part to the bunds of the former oyster beds continuing to inhibit water migration and the licensing of the landfill incorporating a requirement to not place waste material within 15m of the high water mark of the River Medina.

A viable pollutant linkage between the impacted groundwater within the landfill and the River Medina is therefore not considered to be present and the risk associated with this linkage has therefore been assessed to be very low.

6.5.4. Heavy metals and inorganic compounds in landfill material

Barium, nickel, sulphate and ammonia have been identified with the potential to leach out of the landfill waste material at concentrations that could potentially be detrimental to environmental receptors such as the River Medina. However, in order to come into contact with the River, the contaminants would need to be leached out of the waste material by infiltration of surface water, which will be reduced by the hard standing of the proposed development, before entering perched groundwater bodies within the landfill waste, which do not appear to be in consistent continuity with each other. As discussed above, the groundwater within the landfill is also not in significant hydraulic continuity with the River Medina. Therefore a viable pollutant linkage between the impacted landfill waste and the River Medina is not considered to be present and the risk associated with this linkage has therefore been assessed as very low.

6.5.5. Heavy metals and inorganic compounds in Alluvium

Barium, mercury, arsenic, selenium and ammonia have also been identified with the potential to leach out of the upper parts of the Alluvium directly beneath the landfill at concentrations that could potentially be detrimental to environmental receptors such as the River Medina. This impacted material is considered to be in direct contact with the groundwater body retained by the former oyster beds but is not considered to be subject to significant flow through of water that would encourage leaching.

The potential therefore exists for contaminants to leach from the Alluvium to the groundwater within the landfill but as stated above, there is not considered to be a viable pollutant linkage between this groundwater and the River Medina. The risk associated with this linkage has therefore been assessed to be very low.

6.5.6. Buried services

The concentrations of TPH, antimony, chromium and arsenic identified in the near surface soils across the Site have the potential to detrimentally affect the integrity of buried services. Advice should be sought from the suppliers of services to determine appropriate material selection for the identified conditions.

7. CONCLUSIONS AND RECOMMENDATIONS

The Preliminary Risk Assessment of the Site identified potential pollutant linkages relating to soil and made ground of reduced quality in several areas of the site. The subsequent intrusive site investigation and associated Generic Quantitative Risk Assessment revealed a reduced number of pollutant linkages that may need to be addressed as part of the development.

In order to mitigate the risks associated with these linkages the following mitigation measures are recommended:

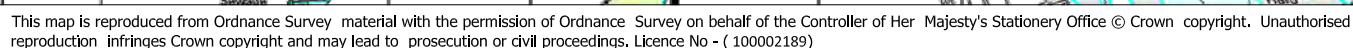
- Any Site won material reused in the construction of the proposed bunds and redevelopment of the Site should be handled in controlled conditions and capped following placement and any of the present Site material exposed during the redevelopment should be capped during the redevelopment to prevent the release of asbestos fibres.
- Suppliers of buried services for the development, particularly water supply pipes, should be provided with the data from this document to allow the appropriate material selection.
- As the only buildings proposed for the development are portacabin structures, the design of the structures (i.e. raised above the ground) are considered to be sufficiently protected from ground gas by design with no additional protection measures recommended. Any other enclosed spaces within the development must be sufficiently ventilated with gas protection measures.
- Contractors on Site should wear appropriate PPE to mitigate the risks from the chemical and physical impacts to the Made Ground at the Site, particularly asbestos.

These mitigation measures, as with any such mitigation or remedial measures, are subject to agreement with the regulatory authority, be it the Local Authority for human health related issues or the Environment Agency for environmental issues.

It is recommended that any removal and disposal of sub-soil arisings and/or groundwater from the Site should be undertaken in a controlled manner to a licensed facility, with due regard to Duty of Care responsibilities. In addition, an appropriate degree of health and safety provision should be incorporated to protect both the Site workers and the general public alike.

During any ground works, it is recommended that skin contact with soils is kept to a minimum in accordance with good working practice / specific control measures and the HSE guidance document 'Protection of Workers and the General Public During the Development of Contaminated Land', 1991.

FIGURE 1: SITE LOCATION PLAN



rev. 0

FIGURE 2: INVESTIGATION LOCATION PLAN



This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence No - (100002189)



Mayer Brown Limited Lion House
Oriental Road Woking Surrey GU22 8AR
Telephone 01483 750 508 Fax 01483 750 437
wokingoffice@mayerbrown.co.uk www.mayerbrown.co.uk

client
EUROVIA ROADSTONE LTD

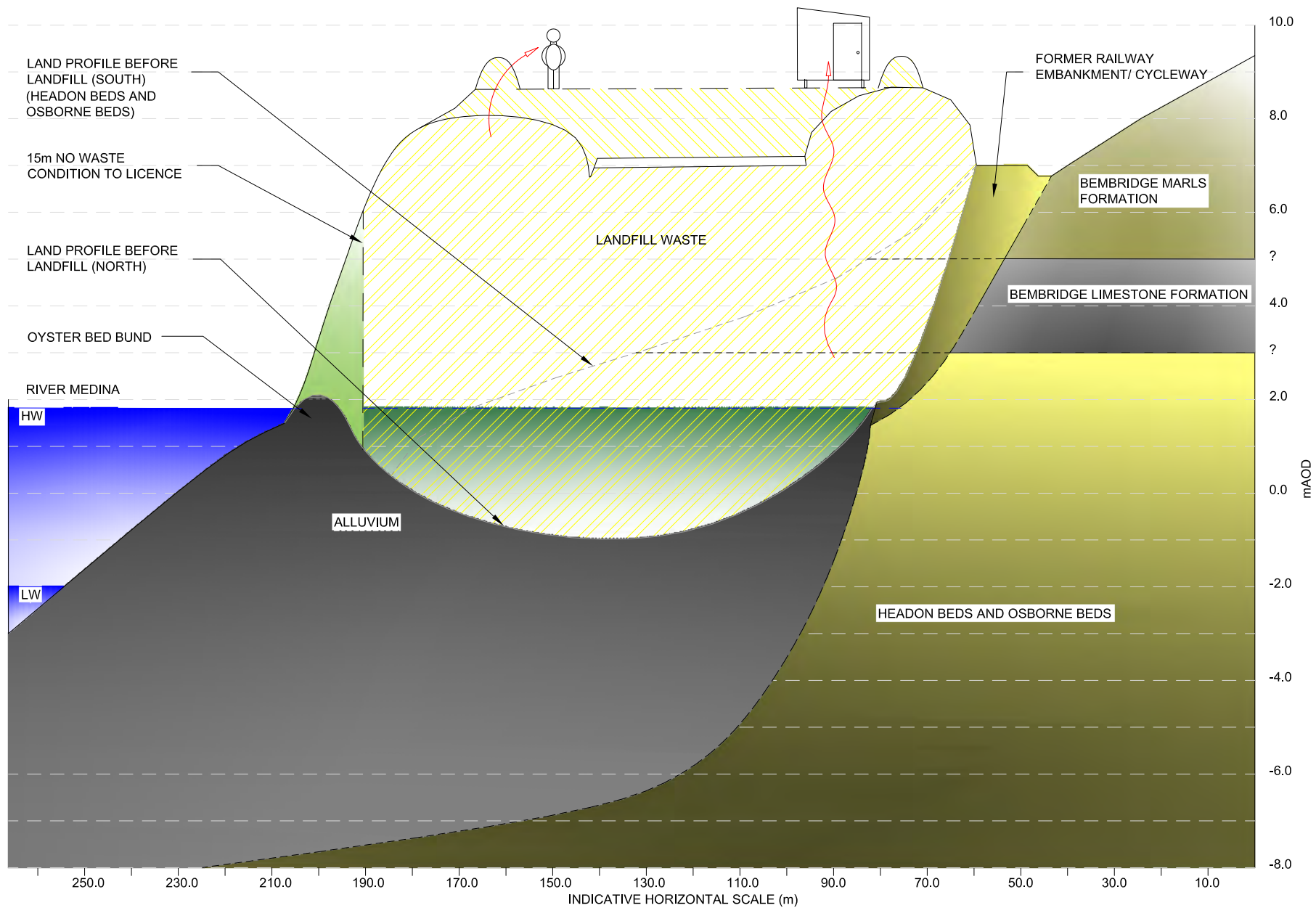
title
**MEDINA WHARF, COWES, ISLE OF WIGHT
INVESTIGATION LOCATION PLAN**

scale NTS@A4 drawn by AP checked by RP

date JANUARY 2013 cad file

drawing number **FIGURE 2** rev. **0**

FIGURE 3: CONCEPTUAL SITE MODEL



Mayer Brown Limited
Lion House
Oriental Road Woking Surrey GU22 8AR
Telephone 01483 750 508 Fax 01483 750 437
wokingoffice@mayerbrown.co.uk www.mayerbrown.co.uk

client

EUROVIA ROADSTONE LTD

project

MEDINA WHARF, ARCTIC ROAD,
COWES, ISLE OF WIGHT

title

CONCEPTUAL SITE MODEL

scale

NTS@A4

drawn by

AP

checked by

RP

date

JANUARY 2012

cad file

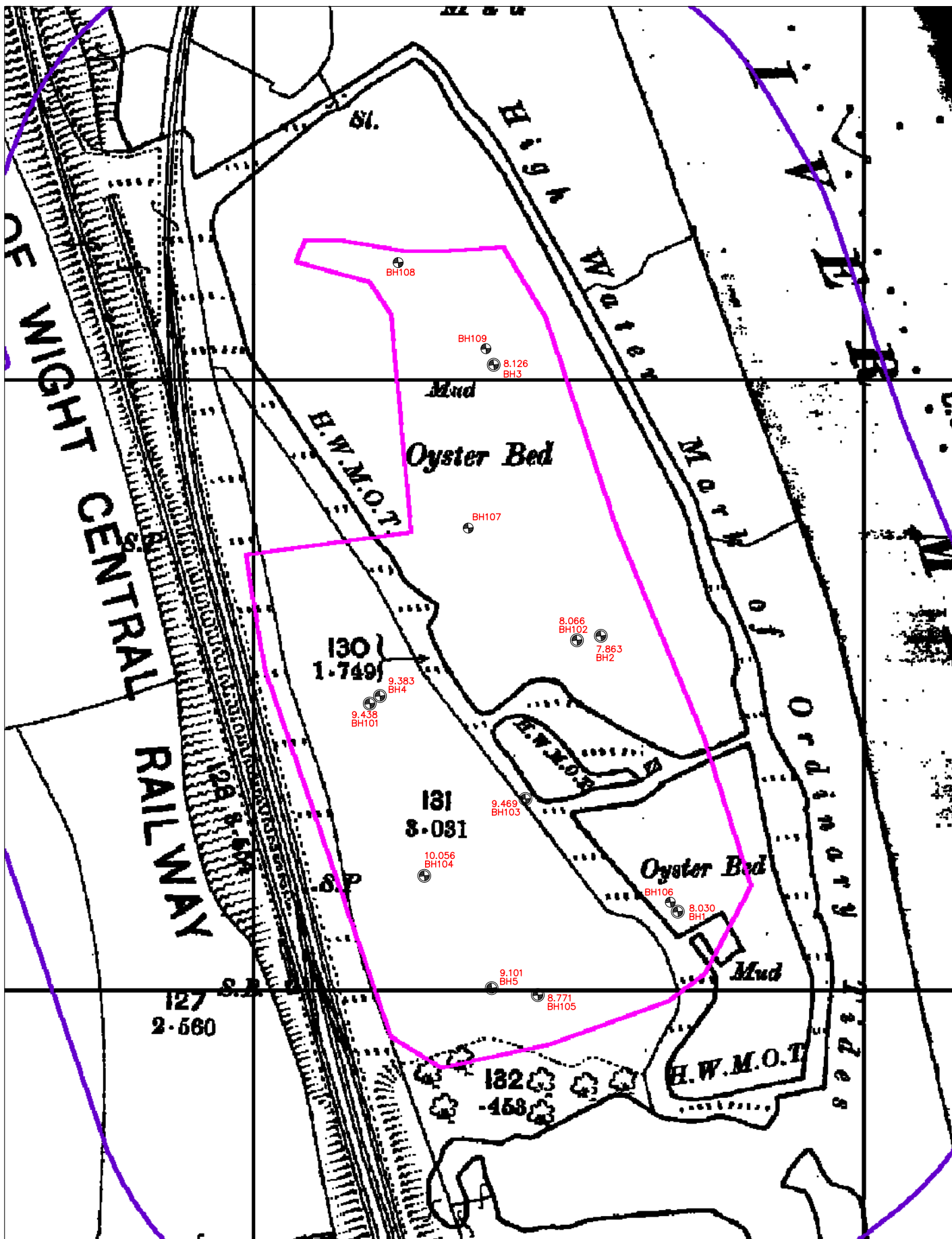
drawing number

FIGURE 3

rev.

1

FIGURE 4: INVESTIGATION LOCATION PLAN ON 1897 OS MAP



This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationary Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence No - (100002189)



Mayer Brown Limited
Lion House
Oriental Road Woking Surrey GU22 8AR
Telephone 01483 750 508 Fax 01483 750 437
wokingoffice@mayerbrown.co.uk www.mayerbrown.co.uk

client

EUROVIA ROADSTONE LTD

title

MEDINA WHARF, COWES, ISLE OF WIGHT
INVESTIGATION LOCATION PLAN
ON 1897 OS MAP

scale NTS@A4

drawn by AP

checked by RP

date JANUARY 2013

cad file

drawing number

FIGURE 4

rev.

0

APPENDIX A: REPORT CONDITIONS

*This report is produced solely for the benefit of **Eurovia Roadstone Ltd** and no liability is accepted for any reliance placed on it by any other party unless specifically agreed in writing otherwise.*

This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of future changes in the condition of the site.

This report is based on a visual site inspection, study of readily accessible referenced historical records, information supplied by those parties noted in the text and preliminary discussions with local and Statutory Authorities. Some of the opinions are based on unconfirmed data and information and are presented in good faith without exhaustive clarification. Where ground contamination is suspected but no physical site test results are available to confirm this, the report must be regarded as initial advice only, and further assessment should be undertaken prior to detailed activities related to the site. Where test results undertaken by others have been made available these can only be regarded as a limited sample. The possibility of the presence of contaminants, not revealed by this research cannot be discounted.

Whilst confident in the findings detailed within this report because there are no exact UK definitions of these matters, being subject to risk analysis, we are unable to give categorical assurances that they will be accepted by Authorities or Funds etc. without question, as such bodies may have unpublished, often more stringent objectives. This report is prepared for the proposed uses stated in the report and should not be used in a different context without reference to Mayer Brown Ltd. In time improved practices or amended legislation may necessitate a re-assessment.

The report is necessarily limited to those aspects of land contamination specifically reported on and no liability is accepted for any other aspect especially concerning gradual or sudden pollution incidents that may occur. The opinions expressed cannot be absolute due to the limitations of time and resources within the context of the agreed brief and the possibility of unrecorded previous use and abuse of the site and adjacent sites. The report concentrates on the site as defined in the report and provides an opinion on surrounding sites. If migrating pollution or contamination (past or present) exists this can only practically be better assessed following extensive on and off site intrusive investigations and monitoring.

APPENDIX B: ENVIROCHECK REPORT

**APPENDIX C: NOTICES OF MODIFICATION OF WASTE DISPOSAL LICENCE
CONDITIONS**

SECTION 7

Notice of Modification of Waste Disposal Licence Conditions

To P D Wharfage and Transport Ltd
..... Riverway
..... Newport
..... Isle of Wight.....

WHEREAS on 13 October 1977 the ISLE OF WIGHT COUNTY COUNCIL (hereinafter called "the Authority") granted to you a Waste Disposal Licence relating to Refuse Tip, South of Medina Wharf, Cowes Isle of Wight

subject to the conditions set out therein

NOTICE is HEREBY GIVEN that the Authority modifies the said conditions as follows :

Condition No 1 remains unchanged.

Conditions 2 to 17 inclusive are revoked and replaced by the new conditions 1A to 26 set out in the attached schedule Ref. WDA 93331.

Such modification shall take effect on forthwith at .

DATED June 1979 . (Signed)
(Designation) County Secretary and
Solicitor

Isle of Wight County Council
County Hall
NEWPORT
Isle of Wight PO30 1UD

N.B. - The person served with this notice may appeal against the authority's decision to the Secretary of State within six months or such longer period as the Secretary of State may allow.

(See notes overleaf.)

NOTES

APPEALS

If a licence holder is aggrieved by the decision of the Waste Disposal Authority in modifying conditions specified in a disposal licence he may appeal to the Secretary of State in accordance with Section 10 of the Control of Pollution Act 1974. Appeals may be notified within six months of the date of this notice to the Secretary, Department of the Environment, Waste Disposal Division, Queen Anne's Chambers, 28 Broadway, London SW1H 9JU. The Secretary of State has power to allow a longer period for the giving of notice of an appeal but he will not normally be prepared to exercise this power unless there are special circumstances which excuse the delay in giving notice of an appeal.

Where a notice giving the authority's decision to modify a disposal licence includes a statement that for the purpose of preventing pollution of water or danger to public health Section 10 (2) of the Control of Pollution Act should not apply to the decision, the notification of an appeal against the decision will not of itself render the decision ineffective pending determination of the appeal.

If you consider that such a statement has been unreasonably included in the notice of decision you may apply, under Section 10(3) of the Control of Pollution Act, to the Secretary of State to determine whether the authority's action was unreasonable or not (the address to write to is as given above). If the Secretary of State determines that the authority acted unreasonably in including such a statement, the authority's decision will become ineffective while an appeal is pending and you will be entitled to recover compensation from the authority in respect of any loss you have suffered in consequence of the statement. Any dispute as to your entitlement to compensation or its amount shall be determined by arbitration.

- 1 A No deposit of waste shall take place unless at least one month previously a working plan, giving details of the proposed conduct of operations at the site, has been submitted to the Waste Disposal Authority, and the licence holder shall notify the Waste Disposal Authority of any proposed change in the actual conduct of operations from the proposals shown in the plan, as altered by any previously notified changes, at least one month before the proposed change is implemented.
- 2 The types and quantities of wastes deposited daily at the site shall not exceed the following :-
- | | Solids (Tonnes) |
|------------------------------------------------------------|-----------------|
| A Domestic and commercial waste - untreated | 40 |
| B Non-hazardous industrial waste - potentially combustible | 5 |
| - inert and non-flammable | 5 |
| C Waste from the construction industry | 40 |
- 3 No deposit shall take place until a suitable access road has first been provided within the site. The road shall be maintained to the reasonable satisfaction of the Waste Disposal Authority.
- 4 No deposit shall take place until a site control office has been provided on the site.
- 5 No deposit shall take place until a site identification board of durable material and finish has been displayed at the site entrance, showing the hours when the site is open and giving the name of the site, the name, address and telephone number of the operator and of the Waste Disposal Authority responsible for issuing the site licence.
- 6 No further deposit of waste shall be made within 15 metres of the high water level on the west bank of the River Medina estuary. No deposit of waste shall take place in the area designated "Area to be filled" on the plan submitted with the licence application until water courses on the site have been diverted, culverted or otherwise protected to the reasonable satisfaction of the Southern Water Authority.
- 7 No deposit shall take place until suitable facilities have been provided for storing and maintaining equipment used on the site.
- 8 No deposit shall take place until movable screens have been provided at intervals near operational areas having regard to wind direction so as to ensure that paper and other materials are contained on the site. Materials arrested by such screens shall be removed and disposed of as necessary to maintain the efficiency of the screens and the tidiness of the site.
- 9 No deposit shall take place until gates and fencing have been provided to the satisfaction of the Waste Disposal Authority so as to reasonably prevent unauthorised access to the site.
- 10 The site shall be adequately manned and supervised during working hours.
- 11 Solid waste shall be compacted and formed into a layer not exceeding 2.5 metres (8 feet) deep as soon as possible after deposit and not later than at the end of the working day on which the waste is received.

- 12 The waste shall either (a) be deposited on the surface of the site behind the face and partially compacted by a tractor or other compacting machine before being pushed over the face or it shall (b) be deposited on the ground forming the base of the site or on a previous layer in front of the face and shall be formed into a compacted layer by being pushed upwards and driven over by a tractor or other compacting machine.
- 13 Before covering, working faces or flanks shall be compacted to form gradients not steeper than 1 in 3.
- 14 Material used for landfill other than that which is wholly non-putrescible shall, subject to the traction needs of vehicles operating at the working face, be covered progressively with suitable non-putrescible or stabilised material throughout the working period each day, so that by the end of each day all exposed surfaces and flanks and face shall have been covered to a depth of not less than 15 centimetres (6 inches).
- 15 All large articles such as furniture, crates and hollow containers likely to cause voids shall be crushed, broken up or flattened and covered each day by other wastes in such a position that they are not within one metre (3 feet) of the surface of two metres (6 feet) of the flanks or face.
- 16 Waste other than inert material shall not be deposited in water.
- 17 Not less frequently than once a week any loose waste which may be lying on the site shall be gathered and disposed of in such a way as to keep the site tidy.
- 18 No waste material shall be burnt within the boundaries of the site, and a fire at the site shall be regarded as an emergency and immediate action shall be taken to extinguish it. All outbreaks of fire shall be notified forthwith to the disposal authority.
- 19 Precautions shall be taken to deal effectively with any vermin and insects on the site.
- 20 A record shall be kept of the types and quantities of waste deposited at the site.
- 21 The terms of the site licence shall be made known to any person who is given responsibility for the management or control of the site and a copy of this shall be displayed at the site control office.
- 22 Each layer of waste and covering material shall be laid to a fall to encourage surface water runoff.
- 23 Until final restoration, completed areas of landfilling shall be graded and maintained in a tidy condition and where necessary action shall be taken to control or destroy weeds.
- 24 The final layer deposited shall be subject to the minimum compaction and shall, to a depth of not less than one metre (3 feet), be kept free of materials likely to interfere with final restoration or subsequent cultivation. This final layer shall not bring the finished level of the site to a higher level than the adjoining land to the west.
- 25 Not less than 14 days notice shall be given to the Waste Disposal Authority of the date on which landfilling is to commence or recommence in the event of a temporary cessation for a period in excess of three months.
- 26 Any temporary cessation of operations for a period in excess of three months shall be notified to the Waste Disposal Authority.

CONTROL OF POLLUTION ACT 1974

Section 7(i)

Notice of Modication of Waste Disposal Licence Conditions

To : Mr E Elsom
General Manager
Corralls Gubbins & Bull
Riverway
Newport
Isle of Wight PO30 5QB

WHEREAS on 13 October 1977 the Isle of Wight County Council (hereinafter called "the Authority") granted to you a Waste Disposal Licence relating to Refuse Tip, South of Medina Wharf, Cowes, Isle of Wight and whereas the licence was modified on 7 June 1979 subject to the conditions set out therein

AND WHEREAS on 23 January 1990 you applied to the Authority to modify the said conditions

NOTICE IS HEREBY GIVEN that the Authority modifies the said conditions as follows:-

Previous Conditions 1 to 26 are hereby revoked and replaced by Conditions 1 to 3 in the Schedule attached to and forming part of this Notice.

Such modifications shall take effect forthwith

Dated : 9 July 1990

(Signed)

(Designation)

FRANK ELSON
County Secretary & Solicitor

Isle of Wight County Council
County Hall
Newport
Isle of Wight
PO30 1UD

NB The person served with this Notice may appeal against the Authority's decision to the Secretary of State within six months or such longer period as the Secretary of State may allow (See notes).

CS	ADMIN
DCS	P.TRANS
ACS(C)	TR.EDN
ACS(SS)	LIGHT
12 JUL 1990	
DESIGN	R.WAY
FORMIC	WASHED
PRINT	
TELE	

1 Site Facilities

- 1.1 The layout of the site shall be as shown on drawing number WDP 9/2. which is attached to and forms part of this licence.
- 1.2 A boundary fence will be maintained along the part of the site bordering the public cycle track and the tree line (between the cycle track and the site) along the south western sector of the site. This fence will be a minimum of 1.3 metres in height, and will be constructed of metal chain link mesh with a maximum mesh gap of 8cms. The fence will be mounted on wooden, concrete or metal posts spaced at intervals not exceeding 3 metres.
- 1.3 All litter which may accumulate against either side, or both sides of the fence, will be removed as often as is necessary to maintain the cleanliness of the fence.
- 1.4 A site access road between the Wharf plant yard and the site entrance will be maintained to a minimum width of 3.5 metres and to a hard surface utilising suitable clinker, ballast or hardcore. Any ruts, depressions or pot-holes will be reinstated as soon as is practicable, but within one week from the date of discovery of the defect. A stockpile of suitable road repair material will be held available on site for this purpose at all times.
- 1.5 Mud, grit, etc, caused by vehicles leaving the site, shall not be allowed to accumulate on any part of the public highways outside the entrance to the Wharf plant yard. Any mud, grit, etc. which is deposited shall be cleared immediately upon deposit, by the utilisation of whatever means or equipment may be necessary to maintain the cleanliness of the public highways.
- 1.6 A site control office and weighbridge shall be provided between the entrance to the Wharf plant yard and the entrance to the landfill area. The site control office shall be located in a position to ensure that all vehicles entering and leaving the site are weighed and monitored.
- 1.7 All vehicles intending to use the landfill site must halt in the Wharf plant yard, and obtain authorisation from the landfill site manager or supervisor before proceeding to the landfill site.
- 1.8 Secondary site tracks giving temporary access to active tipping areas will be maintained to a hard surface using suitable hardcore, etc. Any significant ruts, depressions or potholes will be reinstated as soon as is practicable, but within one month from the date of discovery.

A stockpile of suitable repair material will be kept available on site for this purpose at all times.
- 1.9 No fuel oil or other discharge fluids for vehicular use will be stored on site. No discharge of fluids from vehicles on site will be permitted.

2 Types of Waste

- 2.1 The following types of waste only will be accepted at the site:-

- a) Solid, non-toxic, soils, clays and rubbles, arising from construction, demolition or excavation works, defined as controlled industrial waste under Schedule 3(6) and 3(7) of the Collection and Disposal of Waste Regulations 1988.
- b) Semi-solid clean sand/grit/water slurry, having a minimum solids content of 50%, arising from ballast washing operations in the Wharf plant adjacent to the landfill site only, (defined as controlled industrial waste under Section 30 of Control of Pollution Act 1974 and Schedule 3(6) of the Collection and Disposal of Waste Regulations 1988). The maximum quantity of semisolid slurry (under (a) above) which will be deposited on site during any three monthly periods will not exceed 18184 litres (4000 gallons).

3 Site Operation

- 3.1 The site shall be available for the receipt of waste between 7.30 am - 6.00 pm daily. Any use of the site outside these hours will be permitted only by prior notification to, and with the prior agreement of, the Waste Disposal Authority.
- 3.2 The site shall be supervised at all times during periods of operation or when the adjacent Wharf plant is open, to ensure that:-
 - a) No unauthorised access is gained;
 - b) Wastes are deposited in a controlled manner;
 - c) No unpermitted materials are landfilled.
- 3.3 Solid wastes (as per category 2.1 (a) above only) deposited on site shall be spread and compacted at least weekly to ensure that:-
 - a) No voids occur;
 - b) Significant volumes of standing surface water are avoided;
 - c) An overall tidy appearance is maintained.
- 3.4 Solid wastes (as per category 2.1(a) above) deposited on site shall be spread and compacted, using a suitable machine, no later than the end of the day on which they are deposited. Such wastes shall be covered immediately following spreading and compaction with a layer of inert material (inert soil, clay, clean rubble) to a minimum depth of 15cms.
- 3.5 The depth of layer of waste (as per category 2.1(a) above) shall not, after initial spreading and compaction, exceed 2.5 metres.
- 3.6 Slurry waste (as per category 2.1(b) above) will only be deposited into pre-prepared excavated lagoons of a depth not exceeding 60cms. Slurry reception lagoons shall be securely bundled using impervious clay material to prevent liquid run-off. Lagoons shall not be filled to a depth exceeding 40cms. No liquid run off from the lagoon is permissible.

- 3.7 Slurry reception lagoons (as per 3.6 above) will not be excavated into any area of the site containing wastes (as per category 2.1(a) above) such that wastes would be disposed of on any completed area of landfill.
- 3.8 No wastes will be deposited within 15 metres of the high water level on the west bank of the river Medina, or within 15 metres of the waters' edge in the inlet to the south of the site.
- 3.9 A weekly check will be made of the boundary fence along the western side of the site, and any fly-tipped wastes discovered to have been deposited over the fence will be cleared immediately.
- 3.10 Working faces and clanks shall be formed into gradients not exceeding 1 in 3. Completed flanks and/or other areas of landfill shall not exceed a gradient on 1 in 10.
- 3.11 With the exception of any liquid contained within purposely built lagoons, surface water will not be allowed to accumulate on faces, flanks or completed/dormant areas of landfill.

Any large accumulation of surface water on areas about to be infilled shall be drained prior to the deposit of any wastes if wastes other than clean soil, clay or rubble is to be deposited on those areas.

- 3.12 No wastes or litter shall be burnt within the site, and immediate emergency action will be taken to extinguish any fire detected.
- 3.13 Action will be taken as and if necessary to control vermin/insect infestation at the site.
- 3.14 Completed flanks and areas of infill shall be covered with a final layer of clean soil to a minimum depth of 90cms. This final layer shall be subjected to a minimum of compaction.
- 3.15 At least weekly, a check will be made of the entire site (including the Medina West Bank) and any loose waste which may be lying on the surface shall be gathered and/or covered so as to maintain the tidiness of the site.
- 3.16 An accurate record will be kept of all loads being deposited. This record will identify:-
- a) A description of the load (eg mixed builder's wastes, soil, rubble, timber, paper, metal, etc.);
 - b) The date of deposit;
 - c) The weight (tonnes) of the load.

Records as above will be submitted on a monthly basis to the Waste Disposal Authority, even if a 'NIL' return is involved for any monthly period.

- 3.17 The terms of the site licence shall be made known and understood to all persons having managerial or supervisory responsibility for the site, and to all site operatives, users or sub-contractors.
- 3.18 The final contours of the site will be as shown on drawing No. WDP 9/2, and the site shall be progressively filled to achieve restoration as quickly as possible in accordance with the agreement made with the company in April 1987.

NOTES


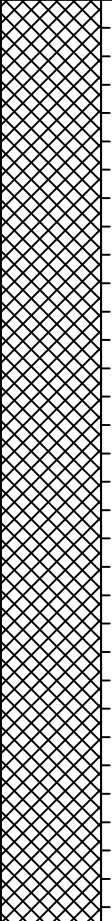
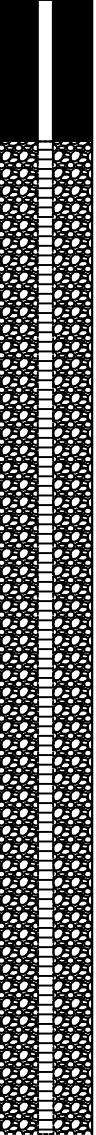
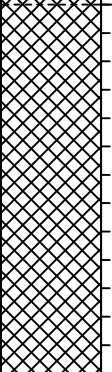
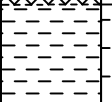
APPEALS


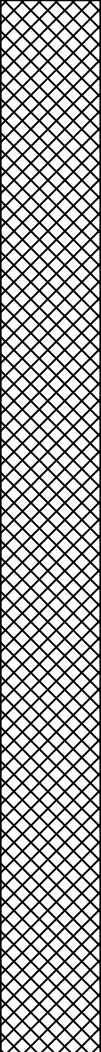
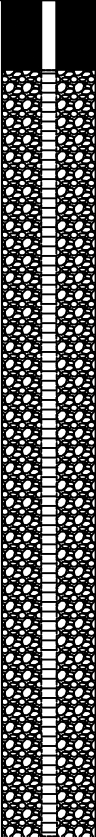
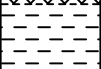
If a licence holder is aggrieved by the decision of the waste disposal authority in modifying conditions specified in a disposal licence he may appeal to the Secretary of State in accordance with Section 10 of the Control of Pollution Act 1974. Appeals must be notified within six months of the date of this notice to the Secretary, Department of the Environment Waste Disposal Division, Queen Anne's Chambers, 28 Broadway, London, SW1H 9JU (for sites in England) or to the Secretary, Welsh Office, Local Government Division, 13th Floor, Pearl Assurance House, Greyfriars Road, Cardiff, CF1 3RT (for sites in Wales). The Secretary of State has power to allow a longer period for the giving of notice of appeal but he will not normally be prepared to exercise this power unless there are special circumstances which excuse the delay in giving notice of an appeal.

Where a notice giving the authority's decision to modify a disposal licence includes a statement that for the purpose of preventing pollution of water or danger to public health Section 10(2) of the Control of Pollution Act should not apply to the decision, the notification of an appeal against the decision will not of itself render the decision ineffective pending determination of the appeal.


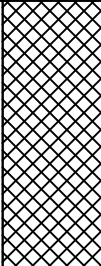


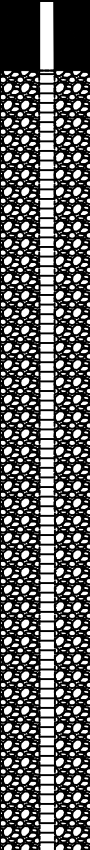


If you consider that such a statement has been unreasonably included in the notice of decision you may apply under Section 10(3) of the Control of Pollution Act to the Secretary of State to determine whether the authority's action was unreasonable or not (the address to write to is given above). If the Secretary of State determines that the authority acted unreasonably in including such a statement the authority's decision will become ineffective while an appeal is pending and you will be entitled to recover compensation from the authority in respect of any loss that you have suffered in consequence of the statement. Any dispute as to your entitlement to compensation or its amount shall be determined by arbitration.

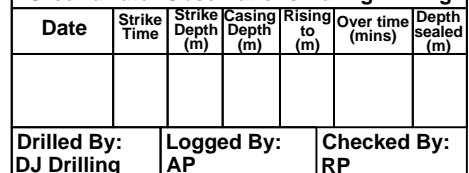
APPENDIX D: ENGINEERING LOGS


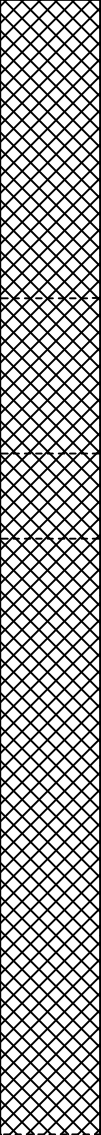

	<h1>Window Sampler Borehole Record</h1>						Sheet: 1 of 1	BH102			
	Site Location: Medina Wharf			Client: Eurovia Roadstone Ltd			Co-ordinates: 450106.14, 94114.41				
Equipment: Geoprobe			Casing: Depth (m): - Diameter (mm): -		OD (m): 8.07		Start Date: 03/12/12 Finish Date: 03/12/12				
Stratum Description	Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm) Depth (m)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details			
MADE GROUND (Soft grey gravelly sandy CLAY with indistinct bands of sandy fine to coarse angular ash and clinker GRAVEL and occasional metal fragments. Gravel is fine to coarse angular to sub-rounded flint, brick and concrete.) (Landfill Waste)		6.60			ES ES	GL-1.0 1.0-6.6					
MADE GROUND (Brown gravelly fine to coarse ash SAND and occasional swarf fragments with a hydrocarbon sheen. Gravel is fine to coarse angular ash and clinker.) (Landfill Waste)		9.30			ES	6.6-9.3					
Very soft grey silty CLAY. (Alluvium)		11.40			ES	9.3-11.4					
Borehole Completed at 11.4mbgl											
Key D Disturbed Sample ES Environmental Sample B Bulk Sample U Undisturbed Sample V Hand Vane ∇ Water Strike ▼ Standing Level	Remarks: 1. Borehole complete at 11.40mbgl 2. Backfilled with slotted 30mm standpipe installed from 8.0mbgl to 1.0mbgl and plain pipe from 1.0mbgl to 1.0magl. Filter gravel from 8.0mbgl to 1.0mbgl, bentonite pellets from 1.0mbgl to GL.				Groundwater Observations During Drilling						
					Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)
					Drilled By: Subadra	Logged By: AP	Checked By: RP				

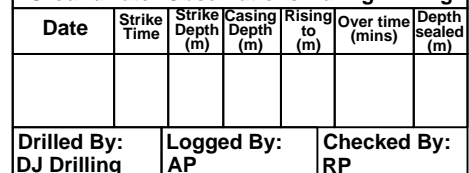
	<h1>Window Sampler Borehole Record</h1>						Sheet: 1 of 1	BH103			
	Site Location: Medina Wharf			Client: Eurovia Roadstone Ltd			Co-ordinates: 450089.29, 94062.46				
Equipment: Terrier			Casing: Depth (m): - Diameter (mm): -		OD (m): 9.47		Start Date: 12/12/12 Finish Date: 12/12/12				
Stratum Description	Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm) Depth (m)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details			
MADE GROUND (Soft to firm greenish grey, black and orange brown gravelly CLAY with indistinct bands of sandy fine to coarse angular ash and clinker GRAVEL and occasional plastic sheeting, asbestos cement sheet, timber, metal and glass fragments. Gravel is fine to coarse angular to sub-rounded flint, brick and concrete.) (Landfill Waste)					ES ES ES	0.5 0.5-3.0 3.0-7.5	 1,3,3,3,2,3 (C) 1,1,1,1,1,1 (C) 3,5,1,1,1,10 (C) 2,1,1,1=225 (C) 2,1,1,2,1,1 (C) 6,3,3,2,2,2 (C) 3,3,4,3,4,4 (C)				
Firm grey slightly gravelly CLAY. Gravel is fine sub-angular to sub-rounded flint. (Headon Beds and Osborne Beds)		7.50 8.00									
Borehole Completed at 8.0mbgl											
Key D Disturbed Sample ES Environmental Sample B Bulk Sample U Undisturbed Sample V Hand Vane ∇ Water Strike ▼ Standing Level		Remarks: 1. Borehole complete at 8.00mbgl 2. Collapsed to 5.9mbgl 3. Backfilled with slotted 30mm standpipe installed from 5.9mbgl to 0.5mbgl and plain pipe from 0.5mbgl to 1.0magl. Filter gravel from 5.9mbgl to 0.5mbgl, bentonite pellets from 0.5mbgl to GL.			Groundwater Observations During Drilling						
					Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)
					Drilled By: DJ Drilling		Logged By: AP		Checked By: RP		


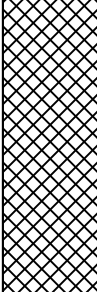
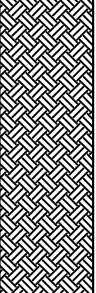


Key D Disturbed Sample ES Environmental Sample B Bulk Sample U Undisturbed Sample V Hand Vane ∇ Water Strike ▼ Standing Level	Remarks: 1. Borehole complete at 7.00mbgl 2. Collapsed to 6.0mbgl 3. Backfilled with slotted 30mm standpipe installed from 6.0mbgl to 0.5mbgl and plain pipe from 0.5mbgl to 1.0magl. Filter gravel from 6.0mbgl to 0.5mbgl, bentonite pellets from 0.5mbgl to GL.	Groundwater Observations During Drilling						
		Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)
		Drilled By: DJ Drilling		Logged By: AP		Checked By: RP		

	<h1>Window Sampler Borehole Record</h1>						Sheet: 1 of 1	BH105			
	Site Location: Medina Wharf			Client: Eurovia Roadstone Ltd			Co-ordinates: 450093.33, 93998.27				
Equipment: Terrier			Casing: Depth (m): - Diameter (mm): -		OD (m): 8.77		Start Date: 12/12/12 Finish Date: 12/12/12				
Stratum Description		Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm) Depth (m)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details		
MADE GROUND (Soft to firm light brown and light grey gravelly CLAY with occasional glass, timber and metal fragments. Gravel is fine to coarse angular to sub-rounded flint, brick and concrete.) (Landfill Waste)			1.90			ES	0.5				
MADE GROUND (Very soft dark grey gravelly organic CLAY with occasional timber, glass and chipboard fragments. Gravel is fine to coarse angular to sub-rounded flint, brick and concrete.) (Landfill Waste)			4.20			ES	3.0				
Firm to stiff light brown mottled light grey slightly silty CLAY with frequent small shell fragments. (Headon Beds and Osborne Beds)		6.00		ES		4.5					
Borehole Completed at 6.0mbgl											
Key D Disturbed Sample ES Environmental Sample B Bulk Sample U Undisturbed Sample V Hand Vane  Water Strike  Standing Level		Remarks: 1. Borehole complete at 6.00mbgl 2. Backfilled with slotted 30mm standpipe installed from 6.0mbgl to 0.5mbgl and plain pipe from 0.5mbgl to 1.0magl. Filter gravel from 6.0mbgl to 0.5mbgl, bentonite pellets from 0.5mbgl to GL.			Groundwater Observations During Drilling						
					Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)
					Drilled By: DJ Drilling		Logged By: AP		Checked By: RP		



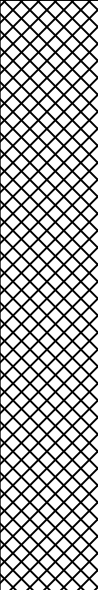
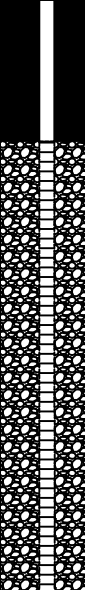
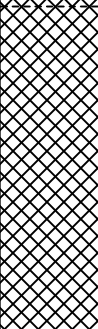
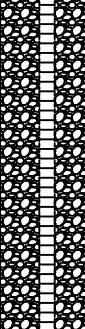
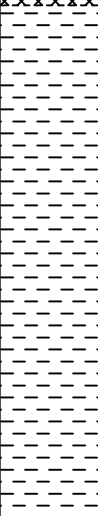
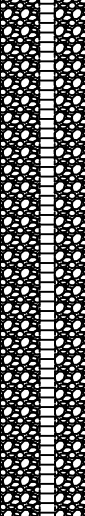
	<h1>Window Sampler Borehole Record</h1>						Sheet: 1 of 1	BH107			
	Site Location: Medina Wharf			Client: Eurovia Roadstone Ltd			Co-ordinates: 450070.56, 94151.11				
Equipment: Terrier			Casing: Depth (m): - Diameter (mm): -		OD (m): 8.10		Start Date: 17/12/12 Finish Date: 17/12/12				
Stratum Description		Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm) Depth (m)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details		
MADE GROUND (Soft to firm light brown and greenish grey slightly sandy silty gravelly CLAY with occasional glass and ceramic fragments. Gravel is fine to coarse angular to sub-rounded flint, brick and concrete.) (Landfill Waste)			2.10			ES	0.5				
MADE GROUND (Dark brown/black very gravelly slightly clayey fine to coarse SAND with swarf, fabric and glass fragments. Gravel is fine to coarse angular to sub-rounded flint, brick and ash.) (Landfill Waste) Hydrocarbon odour between 2.5mbgl and 2.9mbgl			3.20			ES	2.5-2.9				
MADE GROUND (Soft greenish grey slightly gravelly CLAY with occasional glass fragments and organic material. Gravel is fine to coarse angular to sub-rounded flint, brick and concrete.) (Landfill Waste)			3.80			ES	3.8-8.0				
MADE GROUND (Soft to firm dark grey and brown sandy very gravelly CLAY with occasional glass and swarf fragments. Gravel is fine to coarse angular to sub-rounded flint, brick and concrete.) (Landfill Waste)			8.00								
Borehole Completed at 8.0mbgl											
Key D Disturbed Sample ES Environmental Sample B Bulk Sample U Undisturbed Sample V Hand Vane ∇ Water Strike ▼ Standing Level		Remarks: 1. Borehole complete at 8.0mbgl 2. Backfilled with arisings.				Groundwater Observations During Drilling					
					Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)
					Drilled By: DJ Drilling		Logged By: AP		Checked By: RP		



	<h1>Window Sampler Borehole Record</h1>						Sheet: 1 of 1	BH109														
	Site Location: Medina Wharf			Client: Eurovia Roadstone Ltd			Co-ordinates: 450076.35, 94209.82															
Equipment: Terrier			Casing: Depth (m): - Diameter (mm): -		OD (m): 8.10		Start Date: 17/12/12 Finish Date: 17/12/12															
Stratum Description	Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm) Depth (m)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details														
MADE GROUND (Soft to firm light brown very gravelly CLAY with occasional ceramic pipe fragments. Gravel is fine to coarse angular to sub-rounded flint, brick and concrete.) (Landfill Waste)					ES	0.5																
		2.10			ES	2.1-6.0																
MADE GROUND (Soft to firm dark grey sandy very gravelly CLAY with occasional glass, timber and metal fragments. Gravel is fine to coarse angular to sub-rounded flint, brick and concrete.) (Landfill Waste)																						
No recovery between 6.0mbgl and 7.0mbgl																						
MADE GROUND (Dark red slightly clayey sandy fine to medium ash GRAVEL (Landfill Waste))		7.60																				
Borehole Completed at 8.0mbgl		8.00																				
Key D Disturbed Sample ES Environmental Sample B Bulk Sample U Undisturbed Sample V Hand Vane  Water Strike  Standing Level		Remarks: 1. Borehole complete at 8.0mbgl 2. Backfilled with arisings.			Groundwater Observations During Drilling <table border="1"> <tr> <th>Date</th> <th>Strike Time</th> <th>Strike Depth (m)</th> <th>Casing Depth (m)</th> <th>Rising to (m)</th> <th>Over time (mins)</th> <th>Depth sealed (m)</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>				Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)							
Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)																
		Drilled By: DJ Drilling		Logged By: AP		Checked By: RP																

Co-ordinates:	450139.15, 94025.58
---------------	---------------------

Start Date: 13/12/12
Finish Date: 13/12/12

Stratum Description	Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm) Depth (m)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details
MADE GROUND (Soft to firm dark brown/black slightly sandy gravelly CLAY with occasional timber, ceramic and plastic fragments. Gravel is fine to coarse angular to sub-rounded flint, brick and concrete.) (Landfill Waste)		4.20			B1	1.0	1,1=150,1=150,1 (S)	
					B2	2.0	4,3,3,3,1,2 (S)	
					B3	3.0	1,1,4,3,1,2 (C)	
						4.0	2,2,1,1,2,2 (C)	
MADE GROUND (Soft to firm greenish grey and brown silty CLAY with occasional shell, glass, chalk and ash fragments.)		6.50			U4	5.0-5.45	50	
					D6	5.45		
Soft to firm becoming very stiff light brown mottled light grey slightly silty CLAY. (Headon Beds and Osborne Beds)						6.5	1,1,2,1,2,3 (C)	
					U7	8.0-8.45	20	
					D8	8.45		
					D9	9.50	1,1,2,3,3,5 (S)	

Key


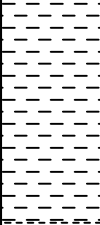
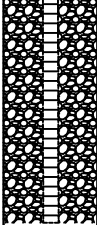
- D** Disturbed Sample
ES Environmental Sample
B Bulk Sample
U Undisturbed Sample
V Hand Vane
▽ Water Strike
▼ Standing Level


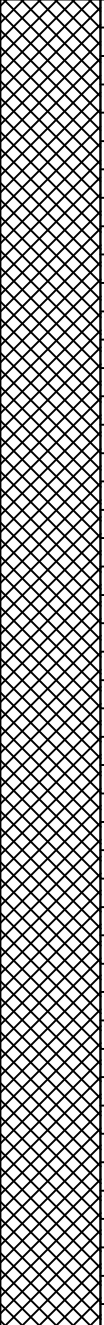
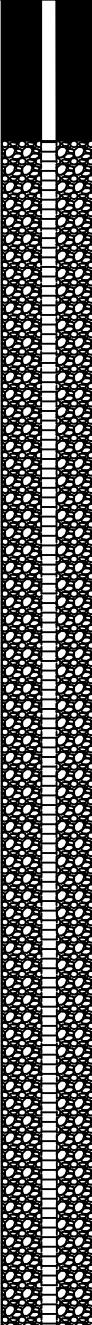
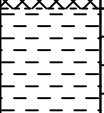


Remarks:


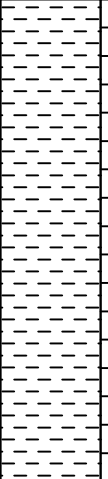
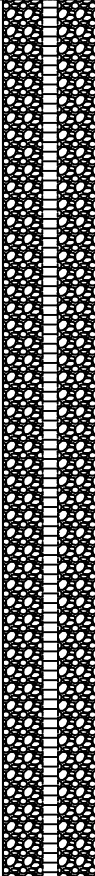
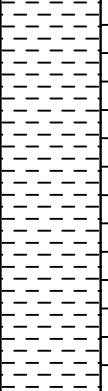
1. Borehole complete at 11.6mbgl
2. Backfilled with slotted 50mm standpipe installed from 11.6mbgl to 1.0mbgl and plain pipe from 1.0mbgl to GL. Filter gravel from 11.6mbgl to 1.0mbgl, bentonite pellets from 1.0mbgl to GL.


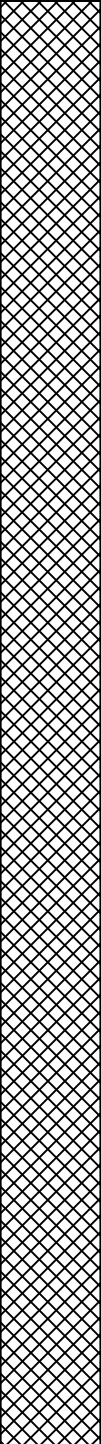
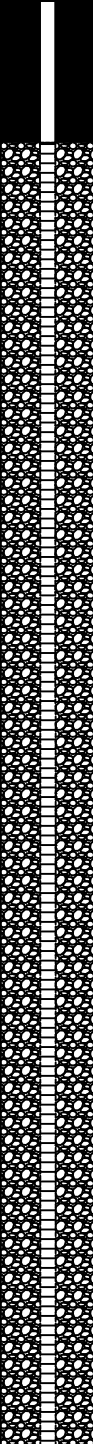
Groundwater Observations During Drilling


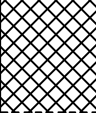
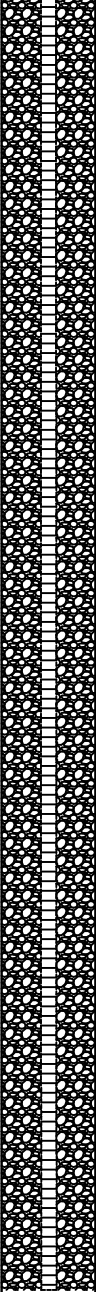
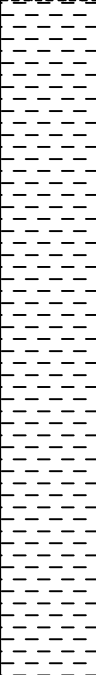
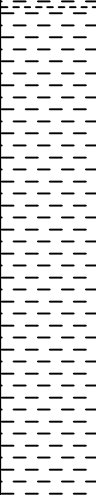
Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)
		11.6	10.0	8.8	20	
Drilled By: DJ Drilling		Logged By: AP		Checked By: RP		


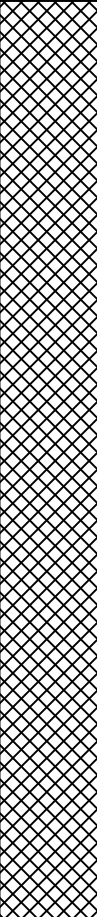
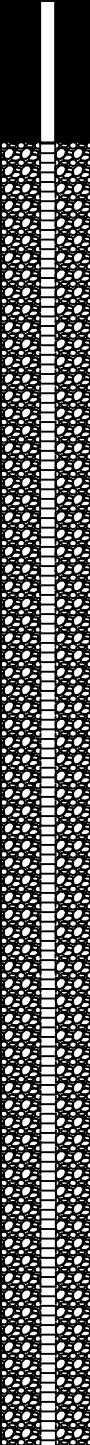
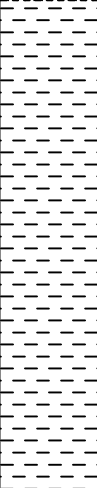
	Cable Percussive Borehole Record						Sheet: 2 of 2	BH1														
	Site Location: Medina Wharf		Client: Eurovia Roadstone Ltd			Co-ordinates: 450139.15, 94025.58																
Equipment: Cable Percussive Rig		Casing: Depth (m): 10 Diameter (mm): 150		OD (m): 8.03		Start Date: 13/12/12 Finish Date: 13/12/12																
Stratum Description	Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm) Depth (m)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details														
Soft to firm becoming very stiff light brown mottled light grey slightly silty CLAY. (Headon Beds and Osborne Beds) (continued)		11.60			U10 B11	11.0-11.35 11.35-11.55 11.6	65 8,17=60mm,50=40mm (C)															
Borehole Completed at 11.6mbgl																						
Key		Remarks:			Groundwater Observations During Drilling																	
D Disturbed Sample ES Environmental Sample B Bulk Sample U Undisturbed Sample V Hand Vane ∇ Water Strike ▼ Standing Level		1. Borehole complete at 11.6mbgl 2. Backfilled with slotted 50mm standpipe installed from 11.6mbgl to 1.0mbgl and plain pipe from 1.0mbgl to GL. Filter gravel from 11.6mbgl to 1.0mbgl, bentonite pellets from 1.0mbgl to GL.			<table><tr><th>Date</th><th>Strike Time</th><th>Strike Depth (m)</th><th>Casing Depth (m)</th><th>Rising to (m)</th><th>Over time (mins)</th><th>Depth sealed (m)</th></tr><tr><td></td><td></td><td>11.6</td><td>10.0</td><td>8.8</td><td>20</td><td></td></tr></table>				Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)			11.6	10.0	8.8	20	
Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)																
		11.6	10.0	8.8	20																	
		Drilled By: DJ Drilling		Logged By: AP		Checked By: RP																


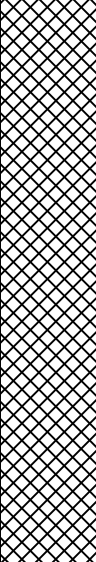
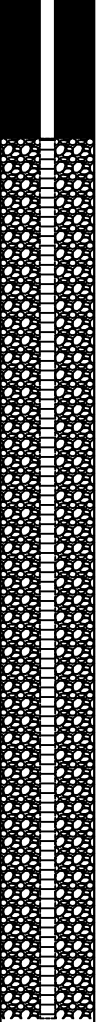
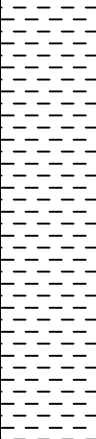
	<h1>Cable Percussive Borehole Record</h1>						Sheet: 1 of 2	BH2		
	Site Location: Medina Wharf			Client: Eurovia Roadstone Ltd			Co-ordinates: 450113.97, 94115.83			
Equipment: Cable Percussive Rig			Casing: Depth (m): 10 Diameter (mm): 150		OD (m): 7.86		Start Date: 14/12/12 Finish Date: 14/12/12			
Stratum Description	Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm) Depth (m)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details		
MADE GROUND (Soft grey gravelly sandy CLAY with indistinct bands of sandy fine to coarse angular ash and clinker GRAVEL and occasional metal fragments. Gravel is fine to coarse angular to sub-rounded flint, brick and concrete.) (Landfill Waste)					B1	1.0	1=150,1,1,1,1 (C)			
						2.0	4,5,5,7,8,6 (C)			
					B2	3.0	3,3,2,2,2,2 (C)			
					B3	4.0	2,2,1,1,1,2 (C)			
						5.0	2,2,2,2,2,3 (C)			
				B4	6.5	1,2,2,4,3,2 (C)				
					8.0	8,9,6,4,3,2 (C)				
		9.40								
Soft to firm dark grey silty CLAY. (Alluvium)					B5	9.50	1,1,1=150,1,1 (C)			
Key D Disturbed Sample ES Environmental Sample B Bulk Sample U Undisturbed Sample V Hand Vane  Water Strike  Standing Level	Remarks: 1. Borehole complete at 16.2mbgl 2. Backfilled with slotted 50mm standpipe installed from 16.2mbgl to 1.0mbgl and plain pipe from 1.0mbgl to GL. Filter gravel from 16.2mbgl to 1.0mbgl, bentonite pellets from 1.0mbgl to GL.			Groundwater Observations During Drilling						
				Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)
				Drilled By: DJ Drilling		Logged By: AP		Checked By: RP		

	Cable Percussive Borehole Record						Sheet: 2 of 2	BH2
	Site Location: Medina Wharf			Client: Eurovia Roadstone Ltd			Co-ordinates: 450113.97, 94115.83	
Equipment: Cable Percussive Rig			Casing: Depth (m): 10 Diameter (mm): 150		OD (m): 7.86		Start Date: 14/12/12 Finish Date: 14/12/12	
Stratum Description	Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm) Depth (m)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details
Soft to firm dark grey silty CLAY. (Alluvium) (continued)		13.40			U6 D7	11.0- 11.45 11.45	15	
						12.5	1=150,1,1,2,2 (C)	
Stiff grey mottled orange brown silty CLAY. (Headon Beds and Osborne Beds)		16.20			U8 B9	14.0- 14.45 14.45- 14.65	30	
						15.5	3,3,6,6,7,7 (S)	
Borehole Completed at 16.2mbgl								
Key D Disturbed Sample ES Environmental Sample B Bulk Sample U Undisturbed Sample V Hand Vane ⚡ Water Strike ⚓ Standing Level		Remarks: 1. Borehole complete at 16.2mbgl 2. Backfilled with slotted 50mm standpipe installed from 16.2mbgl to 1.0mbgl and plain pipe from 1.0mbgl to GL. Filter gravel from 16.2mbgl to 1.0mbgl, bentonite pellets from 1.0mbgl to GL.			Groundwater Observations During Drilling			
		Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)
		Drilled By: DJ Drilling		Logged By: AP		Checked By: RP		

	Cable Percussive Borehole Record						Sheet: 1 of 2	BH3														
	Site Location: Medina Wharf			Client: Eurovia Roadstone Ltd			Co-ordinates: 450078.89, 94204.55															
Equipment: Cable Percussive Rig			Casing: Depth (m): 11.3 Diameter (mm): 150		OD (m): 8.13		Start Date: 14/12/12 Finish Date: 17/12/12															
Stratum Description	Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm) Depth (m)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details														
MADE GROUND (Soft to firm grey gravelly sandy CLAY with indistinct bands of sandy fine to coarse angular ash and clinker GRAVEL and occasional plastic bags, timber, metal and glass fragments. Gravel is fine to coarse angular to sub-rounded flint, brick, concrete and chalk.) (Landfill Waste)					B1	1.0	1=150,1=150,4,2 (C)															
					B2	2.0	2,3,4,3,3,3 (C)															
					B3	3.0	1,1,2,4,6,7 (C)															
					B4	4.0	1=150,1,2,3,2 (C)															
					B5	5.0	1,1,2,1,2,2 (C)															
					B6	6.5	1=150,1,2,1,2 (C)															
					B7	8.0	2,1,2,3,2,3 (C)															
					B8	9.50	2,2,2,2,1,2 (C)															
Key D Disturbed Sample ES Environmental Sample B Bulk Sample U Undisturbed Sample V Hand Vane ▽ Water Strike ▼ Standing Level	Remarks: 1. Borehole complete at 19.1mbgl 2. Backfilled with slotted 50mm standpipe installed from 19.1mbgl to 1.0mbgl and plain pipe from 1.0mbgl to GL. Filter gravel from 19.1mbgl to 1.0mbgl, bentonite pellets from 1.0mbgl to GL.			Groundwater Observations During Drilling <table border="1"> <tr> <th>Date</th> <th>Strike Time</th> <th>Strike Depth (m)</th> <th>Casing Depth (m)</th> <th>Rising to (m)</th> <th>Over time (mins)</th> <th>Depth sealed (m)</th> </tr> <tr> <td></td> <td></td> <td>7.7</td> <td>6.5</td> <td>6.5</td> <td>20</td> <td></td> </tr> </table>					Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)			7.7	6.5	6.5	20	
Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)																
		7.7	6.5	6.5	20																	
			Drilled By: DJ Drilling		Logged By: AP		Checked By: RP															

	Cable Percussive Borehole Record							Sheet: 2 of 2	BH3															
	Site Location: Medina Wharf			Client: Eurovia Roadstone Ltd				Co-ordinates: 450078.89, 94204.55																
Equipment: Cable Percussive Rig			Casing: Depth (m): 10 Diameter (mm): 150		OD (m): 8.13		Start Date: 14/12/12 Finish Date: 17/12/12																	
Stratum Description	Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm) Depth (m)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details																
		10.80																						
Soft to firm dark grey silty CLAY. (Alluvium)					U9 B10	11.0-11.45 11.45-11.65	20																	
					D11	12.5	1,1,1,1,2 (S)																	
					U12 B13	14.0-14.45 14.45-14.65	24																	
		15.60			D14	15.5	1,3,5,10,12,8 (S)																	
Stiff grey mottled orange brown silty CLAY. (Headon Beds and Osborne Beds)					U15 B16	17.0-17.45 17.45-17.65	33																	
					U17 B18	18.5-18.9 18.9-19.1	40																	
Borehole Completed at 19.1mbgl		19.10																						
Key D Disturbed Sample ES Environmental Sample B Bulk Sample U Undisturbed Sample V Hand Vane ☒ Water Strike ▼ Standing Level		Remarks: 1. Borehole complete at 19.1mbgl 2. Backfilled with slotted 50mm standpipe installed from 19.1mbgl to 1.0mbgl and plain pipe from 1.0mbgl to GL. Filter gravel from 19.1mbgl to 1.0mbgl, bentonite pellets from 1.0mbgl to GL.			Groundwater Observations During Drilling <table border="1"> <tr> <th>Date</th> <th>Strike Time</th> <th>Strike Depth (m)</th> <th>Casing Depth (m)</th> <th>Rising to (m)</th> <th>Over time (mins)</th> <th>Depth sealed (m)</th> </tr> <tr> <td></td> <td></td> <td></td> <td>7.7</td> <td>6.5</td> <td>6.5</td> <td>20</td> </tr> </table>						Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)				7.7	6.5	6.5	20
Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)																		
			7.7	6.5	6.5	20																		
			Drilled By: DJ Drilling		Logged By: AP		Checked By: RP																	

	Cable Percussive Borehole Record						Sheet: 1 of 1	BH4														
	Site Location: Medina Wharf		Client: Eurovia Roadstone Ltd			Co-ordinates: 450041.67, 94096.16																
Equipment: Cable Percussive Rig		Casing: Depth (m): 7 Diameter (mm): 150		OD (m): 9.38		Start Date: 17/12/12 Finish Date: 17/12/12																
Stratum Description	Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm) Depth (m)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details														
MADE GROUND (Soft grey gravelly sandy CLAY with indistinct bands of sandy fine to coarse angular ash and clinker GRAVEL and occasional plastic bags and glass fragments. Gravel is fine to coarse angular to sub-rounded flint, brick, concrete and chalk.) (Landfill Waste)					B1	1.0	5,7,8,5,4,4 (C)															
					B2	2.0	4,5,5,7,7,5 (C)															
					B3	3.0	2,2,1,1,2,1 (C)															
					B4	4.0	2,1,1,2,1,2 (C)															
					B5	5.0	1,1=225,1,1															
Firm greenish grey mottled orange brown CLAY with occasional organic matter and frequent small shells. (Headon Beds and Osborne Beds)		6.50			B6	6.5	1,1,1,1,2,1 (C)															
					U7	8.0-8.4	30															
					D8	8.4-8.6																
					D9	9.50	1,2,2,2,3,3 (S)															
Borehole Completed at 10.2mbgl																						
Key D Disturbed Sample ES Environmental Sample B Bulk Sample U Undisturbed Sample V Hand Vane ☐ Water Strike ▼ Standing Level		Remarks: 1. Borehole complete at 10.2mbgl 2. Backfilled with slotted 50mm standpipe installed from 10.2mbgl to 1.0mbgl and plain pipe from 1.0mbgl to GL. Filter gravel from 10.2mbgl to 1.0mbgl, bentonite pellets from 1.0mbgl to GL.			Groundwater Observations During Drilling <table border="1"> <tr> <th>Date</th> <th>Strike Time</th> <th>Strike Depth (m)</th> <th>Casing Depth (m)</th> <th>Rising to (m)</th> <th>Over time (mins)</th> <th>Depth sealed (m)</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>				Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)							
Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)																
			Drilled By: DJ Drilling		Logged By: AP		Checked By: RP															

	Cable Percussive Borehole Record						Sheet: 1 of 1	BH5														
	Site Location: Medina Wharf			Client: Eurovia Roadstone Ltd			Co-ordinates: 450078.22, 94000.54															
Equipment: Cable Percussive Rig			Casing: Depth (m): 4 Diameter (mm): 150		OD (m): 9.10		Start Date: 18/12/12 Finish Date: 18/12/12															
Stratum Description	Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm) Depth (m)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details														
MADE GROUND (Soft to firm light brown and light grey gravelly CLAY with occasional glass, timber and metal fragments. Gravel is fine to coarse angular to sub-rounded flint, brick and concrete.) (Landfill Waste)						1.0	2,4,5,5,3,3 (C)															
					B1	2.0	10,15=15mm,50=25mm (C)															
						2.5-2.8																
						3.0	1,1,1,1,1,1 (C)															
Firm to stiff light brown mottled light grey slightly silty CLAY with frequent small shell fragments. (Headon Beds and Osborne Beds)		4.00			U2	4.0-4.4	20															
					B3	4.4-4.6																
					D4	5.0	2,3,3,2,2,3 (S)															
					U5	6.5-6.95	24															
		7.20			D6	6.95																
Borehole Completed at 7.2mbgl																						
Key		Remarks:			Groundwater Observations During Drilling																	
D Disturbed Sample ES Environmental Sample B Bulk Sample U Undisturbed Sample V Hand Vane ▽ Water Strike ▼ Standing Level		1. Borehole complete at 7.2mbgl 2. Backfilled with slotted 50mm standpipe installed from 7.2mbgl to 1.0mbgl and plain pipe from 1.0mbgl to GL. Filter gravel from 7.2mbgl to 1.0mbgl, bentonite pellets from 1.0mbgl to GL.			<table border="1"> <tr> <th>Date</th> <th>Strike Time</th> <th>Strike Depth (m)</th> <th>Casing Depth (m)</th> <th>Rising to (m)</th> <th>Over time (mins)</th> <th>Depth sealed (m)</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>				Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)							
Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)																
		Drilled By: DJ Drilling		Logged By: AP		Checked By: RP																

APPENDIX E: GENERIC ASSESSMENT CRITERIA

SOIL - TIER ONE HUMAN HEALTH SCREENING VALUES

Status	End Use	Issue No	Issue Date
ISSUE	Commercial / Industrial	1	01/09/10
		</	

NOTES

1) Compare individual samples values against Soil Screening Values (SSV). If exceedences are noted consider further in relation to averaging areas and statistical analysis.

2) These values are for initial screening for potential **risk to human health only**. They are **not remediation thresholds**. **Screening for other receptors to be done separately as appropriate for the site, e.g. for water, ecology, building materials.**

3) Screening criteria denoted with an asterisk (*) were capped at the lower vapour/aqueous saturation limits for Tier 1 human health risk assessment purposes and considered **conservative**. Where concentrations are recorded at levels greater than the SSV, free phase (NAPL) contamination may be present and should be considered qualitatively. Further information to support the interpretation of assessment criteria that exceed theoretical soil saturation limits is provided in Section 4.12 of the CLEA Software Handbook (SR4).

4) Screening criteria denoted with hash (#) were capped at 1000000mg/kg. It is noted that aesthetic (e.g. odour) and other site specific factors may also be relevant when providing advice relating to these compounds.

5) SSVs are given here only for commonly encountered chemical constituents listed above.

6) SSVs derived for certain constituents may be low in relation to standard laboratory Limits of Detection (LoD). It is the responsibility of the project engineer to check with the laboratory that appropriate detection limits can be achieved. As a target, an LoD would be no larger than 10% of the SSV, but this is not practicable for some constituents. Clearly an LoD greater than the SSV would prevent use of this SSV screening and/or be interpreted as if all samples exceeded the SSV.

7) **Human Health Soil Screening Values (SSV) were** calculated using a Soil Organic Matter (SOM) value of 1.0%, 2.5% and 6%. This is equivalent to an Fraction Organic Carbon (FOC) values of approx. 0.6%, 1.45% and 3.5% respectively (For reference FOC = 0.58*SOM). **Note that some soils have different SOM/FOC, which may give require more stringent SSVs for organic compounds. It is the responsibility of the project engineer to check the SOM with the site specific conditions.**

8) In general, SSVs above 100mg/kg are rounded down to 3 significant figures. Similarly, SSVs below 100mg/kg are rounded down to 2 significant figures

WATER QUALITY STANDARDS

Status			Issue No			Date					
ISSUE			2			01/01/2013					
Choose water quality standard based on receptors identified at the site.											
Eg in groundwater Source Protection Zone or near any drinking water supply, use DWS. If near ecological receptor/river etc, use freshwater EQS, if site is near coast use saline EQS. If more than one applicable use lowest, if in doubt use TSV (defined as lowest of freshwater EQS and UK DWS).											
Name of Determinand		TSV freshwater (Tier 1 Screening Value) Defined as most conservative of DWS and freshwater EQS		Origin of TSV		Drinking Water Standards 2000		Fresh water EQS		Marine water EQS	
All units µg/l unless otherwise stated						All units µg/l unless otherwise stated					
Electrical Conductivity (µS/cm)		2500		UK Drinking Water Standard		2500					
PH		6-9		EQS		6.5 - 10		6-9		7-8.5	
Dissolved O ₂		50% >7-9		Freshwater Fish Directive		-		-		-	
Suspended solids		25000		Freshwater Fish Directive		-		-		-	
BOD		3000 salmonid, 6000 cyprinid		Freshwater Fish Directive		-		-		-	
Abamectin		0.01 (AA)		EQS		-		0.01 (AA)		0.003 (AA)	
Acrylamide		0.1		UK Drinking Water Standard		0.1		-		-	
Aldrin		0.01 (AA)		EQS		0.03		0.01 (AA)		0.01 (AA)	
Aluminium		pH <6.5 then 10 (MAC) > 6.5 then 15 (AA) or 25 (MAC)		EQS		200		pH <6.5 then 10 (MAC) > 6.5 then 15 (AA) or 25 (MAC)		15 (AA)	
Ammonium (NH ₄)		300		draft EQS		500(MAC)		300 (draft wfd report dept on alkalinity & altitude)		-	
Anthracene		0.02		EQS		-		0.02		0.02	
Antimony		5		UK Drinking Water Standard		5		-		-	
Arsenic		10		UK Drinking Water Standard		10		50 (AA)		25 (AA)	
Atrazine		2 (AA)		EQS		-		2 (AA)		2 (AA)	
Azamethiphos		0.02 (AA)		EQS		-		0.02 (AA)		0.02 (AA)	
Azinphos-methyl		0.01 (AA)		EQS		0.1		0.01 (AA)		0.01 (AA)	
Barium		100		Surface Water Abstraction Directive - DW1 limit		-		-		-	
Bentazone		500 (AA)		EQS		-		500 (AA)		500 (AA)	
Benzene		1		UK Drinking Water Standard		1		30 (AA)		30 (AA)	
Benzo-a-pyrene		0.01		EQS		0.01		0.03		0.03	
Biphenyl		25 (AA)		EQS		-		25 (AA)		25 (AA)	
Boron		1000		UK Drinking Water Standard		1000		2000 (AA)		7000 (AA)	
Bromine		2 (AA)		EQS		-		2 (AA)		10 (MAC)	
Bromate		10		UK Drinking Water Standard		10		-		-	
Bromoxynil		100 (AA)		EQS		-		100 (AA)		100	
Bronopol (Pyceze)		70 (MAC)		SEPA EQS for aquaculture		-		70 (MAC)		-	
Cadmium		5 (AA)		EQS		5		5 (AA)		2.5 (AA)	
Carbendazim		0.1 (AA)		EQS		-		0.1 (AA)		0.1 (AA)	
Carbon tetrachloride (CT)		12 (AA)		EQS		-		12 (AA)		12 (AA)	
Chloride (Water Soluble)		250000 (AA)		EQS		250000		250000 (AA)		-	
Chlorine		2 (AA)		EQS		-		2 (AA)		10 (AA)	
Chlorfenvinphos		0.03 (AA)		EQS		-		0.03 (AA)		0.03 (AA)	
Chloroform		12 (AA)		EQS		-		12 (AA)		12 (AA)	
4-chloro-3-methyl phenol		40 (AA)		EQS		-		40 (AA)		40 (AA)	
Chloronitrotoluenes (Total - all isomers)		10 (AA)		EQS		-		10 (AA)		10 (AA)	
2-chlorophenol		50 (AA)		EQS		-		50 (AA)		50 (AA)	
Chlorpropham		10 (AA)		EQS		0.1		10 (AA)		10 (AA)	
Chlorothalonil		0.1 (AA)		EQS		-		0.1 (AA)		0.1 (AA)	
Chlorotoluron		2 (AA)		EQS		-		2 (AA)		2 (AA)	
Chlorpyrifos		0.002 (AA)		EQS		-		0.002 (AA)		0.001 (AA)	
		EQS 1 EQS 2						EQS 1 EQS2		15 (AA)	
Chromium		0-50mg CaCO3/l 5 150						0-50mg CaCO3/l 5 150			
		50-100mg CaCO3/l 10 175						50-100mg CaCO3/l 10 175			
		100-150mg CaCO3/l 20 200		EQS		50		100-150mg CaCO3/l 20 200			
		150-200mg CaCO3/l 20 200						150-200mg CaCO3/l 20 200			
		200-250mg CaCO3/l 50 250						200-250mg CaCO3/l 50 250			
		>250mg/l CaCO3/l 50 250						>250mg/l CaCO3/l 50 250			
Copper		EQS 1 EQS 2						EQS 1 EQS2		5 (AA)	
		0-50mg CaCO3/l 1 1						0-50mg CaCO3/l 1 1			
		50-100mg CaCO3/l 6 6						50-100mg CaCO3/l 6 6			
		100-150mg CaCO3/l 10 10		EQS		2000		100-150mg CaCO3/l 10 10			
		150-200mg CaCO3/l 10 10						150-200mg CaCO3/l 10 10			
		200-250mg CaCO3/l 10 10						200-250mg CaCO3/l 10 10			
		>250mg CaCO3/l 28 28						>250mg CaCO3/l 28 28			
Cobalt (dissolved)		3 (AA)		EQS		-		3 (AA)		3 (AA)	
Coumaphos		0.01 (AA)		EQS		-		0.01 (AA)		0.03 (AA)	
Cyanide		1		EQS		50		1		-	
Cyfluthrin (total)		0.001 (AA)		EQS		-		0.001 (AA)		0.001 (AA)	
Cypermethrin		0.0002 (AA)		EQS		-		0.0002 (AA)		0.0002 (AA)	
2,4-D (ester) (In Statutory Instrument not stated that as total)		1 (AA)		EQS		-		1 (AA)		1 (AA)	
2,4-D (non-ester) (In Statutory Instrument not stated that as total)											
		40 (AA)		EQS		-		40 (AA)		40 (AA)	
DDT (Total- all 4 isomers)		0.025 (AA)		EQS		-		0.025 (AA)		0.025 (AA)	
ppDDT (total)		0.01 (AA)		EQS		-		0.01 (AA)		0.01 (AA)	
Demeton		0.05 (AA)		EQS		-		0.05 (AA)		0.05 (AA)	
Diazinon		0.03 (AA)		EQS		-		0.03 (AA)		0.03 (AA)	
Dichlorobenzenes (sum of all isomers)		20 (AA)		EQS		-		20 (AA)		20 (AA)	
1,2-dichloroethane (total)		3 (AA)		UK Drinking Water Standard		3		10 (AA)		10 (AA)	
Dichloromethane		2000 (AA)		EQS		-		2000 (AA)		2000 (AA)	
2,4-dichlorophenol		20 (AA)		EQS		-		20 (AA)		20 (AA)	
Dichlorvos		0.001 (AA)		EQS		-		0.001 (AA)		0.04 (AA)	
Dieldrin (total)		0.01 (AA)		EQS		0.03		0.01 (AA)		0.01 (AA)	
Diflubenzuron		0.001 (AA)		EQS		-		0.001 (AA)		0.005 (AA)	
Dimethoate		1 (AA)		EQS		-		1 (AA)		1 (AA)	
Dimethoate		1 (AA)		EQS		-		1 (AA)		1 (AA)	
Diuron		2 (AA)		EQS		-		2 (AA)		2 (AA)	
Doramectin		0.001 (AA)		EQS		-		0.001 (AA)		0.001 (AA)	
EDTA (ethylenediaminetetraacetic acid)		400 (AA)		EQS		-		400 (AA)		400 (AA)	
Emamectin benzoate		0.22 (ng/l) (AA)		SEPA EQS for aquaculture		-		0.22 (ng/l) (AA)		0.763 (AA)	
Endosulphan		0.003 (AA)		EQS		-		0.003 (AA)		0.003 (AA)	
Endrin (total)		0.005 (AA)		EQS		-		0.005 (AA)		0.005	
Epichlorohydrin		0.1		UK Drinking Water Standard		0.1		-		-	
17α-Ethinylestradiol		0.0001 n(AA)		PNEC		-		0.0001 n(AA)		0.0001 (AA)	
Ethylbenzene		20 (AA)		EQS		-		20 (AA)		20 (AA)	
Fenchlorphos		0.03 (AA)		EQS		-		0.03 (AA)		0.03 (AA)	
Fenitrothion		0.01 (AA)		EQS		0.1		0.01 (AA)		0.01 (AA)	
Fluocifuron (total)		0.1		UK Drinking Water Standard		0.1		1		1	
Fluoranthene		0.02		EQS		-		0.02		0.002	
Fluoride		<50 mg CaCO3/l = 1000 >50 mg CaCO3/l = 5000		EQS		1500 25		<50 mg CaCO3/l = 1000 >50 mg CaCO3/l = 5000		5000	
Formaldehyde		5 (AA)		EQS		-		5 (AA)		-	
Heptachlor		0.03 (AA)		UK Drinking Water Standard		0.03 (AA)		-		-	
Heptachlor epoxide		0.03 (AA)		UK Drinking Water Standard		0.03(AA)		-		-	
Hexachlorobenzene (total)		0.03 (AA)		EQS		-		0.03 (AA)		0.03 (AA)	
Hexachlorobutadiene (total)		0.1 (AA)		EQS		-		0.1 (AA)		0.1 (AA)	
Hexachlorocyclohexane (total)		0.1 (AA)		EQS		-		0.1 (AA)		0.02 (AA)	
Hydrogen sulphide (Undissociated)		0.25 (AA)		EQS		-		0.25 (AA)		10 (MAC)	
Isosnill (total)		10 (AA)		EQS		-		10 (AA)		10 (AA)	
Iron (dissolved)		200		EQS		200		1000 (AA)		1000 (AA)	
Isodrin (total)		0.005 (AA)		EQS		-		0.005 (AA)		0.005 (AA)	
Isoproturon		2 (AA)		EQS		-		2 (AA)		2 (AA)	
Ivermectin		0.0001 (AA)		EQS		-		0.0001 (AA)		0.001 (AA)	
Lead (Dissolved)		EQS1 EQS2		EQS		-		EQS1 EQS2		25 (AA)	
		0-50mg CaCO3/l 4 50						0-50mg CaCO3/l 4 50			
		50-100mg CaCO3/l 10 125						50-100mg CaCO3/l 10 125			
		100-150mg CaCO3/l 10 125						100-150mg CaCO3/l 10 125			
		150-200mg CaCO3/l 20 250						150-200mg CaCO3/l 20 250			
		200-250mg CaCO3/l 20 250						200-250mg CaCO3/l 20 250			
		>250mg CaCO3/l 20 250						>250mg CaCO3/l 20 250			

Name of Determinand	TSV freshwater (Tier 1 Screening Value) Defined as most conservative of DWS and freshwater EQS		Origin of TSV	Drinking Water Standards 2000	Fresh water EQS		Marine water EQS
All units µg/l unless otherwise stated				All units µg/l unless otherwise stated			
Linuron	0.1		UK Drinking Water Standard	0.1	2 (AA)		2 (AA)
Malathion	0.01 (AA)		EQS	-	0.01 (AA)		0.02 (AA)
Malachite Green	0.5 (AA)		EQS	-	0.5 (AA)		0.5 (AA)
Mancozeb	2 (AA)		EQS	-	2 (AA)		2 (AA)
Manganese (Dissolved)	30 (AA)		EQS	50	30 (AA)		-
Maneb	3 (AA)		EQS	-	3 (AA)		3 (AA)
MCPA (S-ethyl (4-chloro-2-methylphenoxy)ethanethioate)	0.1		UK Drinking Water Standard	0.1	pH<7 = 12		80 (AA)
	0.1		UK Drinking Water Standard	0.1	pH>7 = 80		2
Mecoprop	20 (AA)		EQS	-	20 (AA)		20 (AA)
Mercury	1 (AA)		EQS	1	1 (AA)		3 (AA)
Methiocarb	0.01 (AA)		EQS	-	0.01 (AA)		0.01 (AA)
Methylphenols (0.3 2-MP, 0.2 3-MP, 1 4-MP) (=cresols)	100 (AA)		EQS	-	100 (AA)		100 (AA)
Mevinphos	0.02 (MAC)		EQS	-	0.02 (MAC)		-
Naphthalene	10 (AA)		EQS	-	10 (AA)		5 (AA)
Nickel (Dissolved)	EQS 1 EQS 2		EQS	-	EQS 1 EQS 2		30 (AA)
	0-50mg CaCO3/l	50 50	EQS	20	0-50mg CaCO3/l	50 50	-
	50-100mg CaCO3/l	100 100	EQS	-	50-100mg CaCO3/l	100 100	-
	100-150mg CaCO3/l	150 150	EQS	-	100-150mg CaCO3/l	150 150	-
	150-200mg CaCO3/l	150 150	EQS	-	150-200mg CaCO3/l	150 150	-
	200-250mg CaCO3/l	200 200	EQS	-	200-250mg CaCO3/l	200 200	-
	>250mg CaCO3/l	200 200	EQS	-	>250mg CaCO3/l	200 200	-
Nitrates (NO ₃)	50000		Surface Water Abstraction Directive DW1 limit	-	-		-
Nitrites (NO ₂)	10 salmonid, 30 cyprinid		Freshwater Fish Directive	500	-		-
Nonyl phenol	1 (AA)		EQS	-	1 (AA)		1 (AA)
NTA (Nitrilotriacetic acid)	1000 (AA)		EQS	-	1000 (AA)		3000 (AA)
Octyl phenol	1 (AA)		EQS	-	1 (AA)		1(AA)
17β-Oestradiol	0.001 (AA)		PNEC	-	-		-
Omelthoate	0.01 (AA)		EQS	-	0.01 (AA)		-
PAHs: (Sum of: Benzo(b) fluoranthene Benzo(k)fluoranthene Benzo(ghi)perylene Indeno(1,2,3-cd)pyrene)	0.1		UK Drinking Water Standard	0.1	-		-
PCSDs (flucufuron and sulcofuron) (total)	0.05		EQS	-	0.05		0.05
Pendimethalin	0.1		UK Drinking Water Standard	0.1	1.5 (AA)		1.5 (AA)
Pentabromodiphenylether	0.5		EQS	-	0.5		0.5
Pentachlorophenol	0.1		UK Drinking Water Standard	0.1	2 (AA)		2 (AA)
Permethrin (total)	0.01		EQS	-	0.01		0.01
Pesticides (sum of Parathion, g-HCH and Dieldrin)	0.5		UK Drinking Water Standard	0.5	-		-
Other pesticides	0.1 (AA)		UK Drinking Water Standard	0.1 (AA)	-		-
Phenol	0.5		UK Drinking Water Standard	0.5	30 (AA)		30 (AA)
Dimethyl phthalate (DMP)	800 (AA)		EQS	-	800 (AA)		800 (AA)
Diethyl phthalate (DEP)	200 (AA)		EQS	-	200 (AA)		200 (AA)
Di-butyl phthalates (DBPs)	8 (AA)		EQS	-	8 (AA)		8 (AA)
Butylbenzyl phthalate (BBP)	20 (AA)		EQS	-	20 (AA)		20 (AA)
Di-octyl phthalates (DOPs)	20 (AA)		EQS	-	20 (AA)		20 (AA)
di(2ethylhexyl)phthalate	8		WHO DWS	-	-		-
Phthalates	See above, no total, by individual phthalate only		WHO DWS	-	-		-
Pirimicarb	1 (AA)		EQS	-	1 (AA)		1 (AA)
Pirimiphos-methyl	0.015 (AA)		EQS	-	0.015 (AA)		0.015 (AA)
Prochloraz	4 (AA)		EQS	-	4 (AA)		4 (AA)
Propetamphos	0.03 (AA)		EQS	-	0.03 (AA)		0.03 (AA)
Propyzamide	100 (AA)		EQS	-	100 (AA)		100 (AA)
Silver (Total dissolved)	0.05 (AA)		EQS	-	0.05 (AA)		0.5 (AA)
Selenium	10 (AA)		Surface Water Abstraction Directive DW1 limit	10	-		-
Simazine	2 (AA)		EQS	-	2 (AA)		2 (AA)
Sulcofuron (total)	25		EQS	-	25		25
Sulphate	250,000		Surface Water Abstraction Directive	-	400000 (AA)		-
Surfactants	200		Surface Water Abstraction Directive DW1 limit	-	200		-
Styrene	50 (AA)		EQS	-	50 (AA)		50 (AA)
Technazene (Total)	1 (AA)		EQS	-	1 (AA)		1 (AA)
Teflubenzuron (Calicide)	6 (ng/l)		SEPA EQS for aquaculture	-	6 (ng/l)		2
Tetrachloroethylene (PCE)	10 (AA)		EQS	-	10 (AA)		10 (AA)
Tetrachloroethene and							
Trichloroethene	10		UK Drinking Water Standard	10	-		-
Tetrachloromethane	3		UK Drinking Water Standard	3	-		-
Thiabendazole	5 (AA)		EQS	-	5 (AA)		5 (AA)
Tin	25 (AA)		EQS	-	25 (AA)		10 (AA)
Toluene	50 (AA)		EQS	-	50 (AA)		40 (AA)
TPH:							
Aliphatic EC C5-C6	15000		WHO DWS	15000	-		-
Aliphatic EC>C6-C8	15000		WHO DWS	15000	-		-
Aliphatic EC>C8-C10	300		WHO DWS	300	-		-
Aliphatic EC>C10-C12	300		WHO DWS	300	-		-
Aliphatic EC>C12-C16	300		WHO DWS	300	-		-
Aliphatic EC>C16-C21	300*		WHO DWS	300*	-		-
Aliphatic EC>C21-C35	300*		WHO DWS	300*	-		-
Aromatic EC C6-C7	1 (Benzene)		UK Drinking Water Standard	1	30 (AA)		30 (AA)
Aromatic EC>C7-C8	50 (Toluene)		EQS	-	50 (AA)		40 (AA)
Aromatic EC>C8-C10	20 (Ethylbenzene)		EQS	-	20 (AA)		20 (AA)
Aromatic EC>C10-C12	100		WHO DWS	100	-		-
Aromatic EC>C12-C16	100		WHO DWS	100	-		-
Aromatic EC>C16-C21	90		WHO DWS	90	-		-
Aromatic EC>C21-C35	90		WHO DWS	90	-		-
Triallate	0.25 (AA)		EQS	-	0.25 (AA)		0.25 (AA)
Triazophos	0.005 (AA)		EQS	-	0.005 (AA)		0.005 (AA)
Tributyltin cmpds	0.02 (MAC)		EQS	-	0.02 (MAC)		0.002 (MAC)
Tributyltin	0.02 (MAC)		EQS	-	0.02 (MAC)		0.002 (MAC)
Tributyl phosphate	50 (AA)		EQS	-	50 (AA)		50 (AA)
Trichlorobenzene	0.4 (AA)		EQS	-	0.4 (AA)		0.4 (AA)
1,1,1-trichloroethane	100 (AA)		EQS	-	100 (AA)		100 (AA)
1,1,2-trichloroethane	400 (AA)		EQS	-	400 (AA)		300 (AA)
Trichloroethene	10 (AA)		EQS	-	10 (AA)		10 (AA)
Trifluralin	0.1 (AA)		EQS	-	0.1 (AA)		0.1 (AA)
Trihalomethanes (sum of chloroform, bromoform, dibromochloromethane and bromodichloromethane)	100		UK Drinking Water Standard	100	-		-
Triphenyltin cmpds (Total)	0.02 (MAC)		EQS	-	0.02 (MAC)		0.008 (MAC)
Triphenyltin and its derivatives	0.02 (MAC)		EQS	-	0.02 (MAC)		0.008 (MAC)
Vanadium (Total)	EQS1 EQS2		EQS	-	EQS1 EQS2		100 (AA)
	0 - 50mg CaCO3/l	20 20		-	0 - 50mg CaCO3/l	20 20	-
	50-100mg CaCO3/l	20 20		-	50-100mg CaCO3/l	20 20	-
	100-150mg CaCO3/l	20 20		-	100-150mg CaCO3/l	20 20	-
	150-200mg CaCO3/l	20 20		-	150-200mg CaCO3/l	20 20	-
	200-250mg CaCO3/l	60 60		-	200-250mg CaCO3/l	60 60	-
	>250mg CaCO3 /l	60 60		-	>250mg CaCO3 /l	60 60	-
Vinyl Chloride (VC)	0.5		UK Drinking Water Standard	0.5	-		-
Xylenes	30 (AA)		EQS	-	30 (AA)		30 (AA)
Zinc	EQS1 EQS2		EQS	-	EQS1 EQS2		40 (AA)
	0-50mg CaCO3/l	8 75		-	0-50mg CaCO3/l	8 75	-
	50-100mg CaCO3/l	50 175		-	50-100mg CaCO3/l	50 175	-
	100-150mg CaCO3/l	75 250		-	100-150mg CaCO3/l	75 250	-
	150-200mg CaCO3/l	75 250		-	150-200mg CaCO3/l	75 250	-
	200-250mg/l CaCO3/l	75 250		-	200-250mg/l CaCO3/l	75 250	-
	>250mg CaCO3/l	125 500		-	>250mg CaCO3/l	125 500	-

* There are no WHO Guideline Values for aliphatic fractions C16-C21 and C21-C35, therefore the guideline value for aliphatic fractions inclusive of C8-C16 (300<g/l) has been applied.

All units µg/l unless otherwise stated

Use these values for initial assessment of all water and leachate results

AA = Annual Average

MAC = Maximum Concentration

EQS 1 - derived to protect the most sensitive aquatic life (**Salmonid (game) fish**)

EQS 2 - derived to protect less sensitive aquatic life (**Cyprinid (coarse) fish**)

TSVs - Tier 1 Screening Values

TSVs listed above defined as most conservative of DWS and EQS assuming potable water supply and river ecosystems are receptors at site.

References.

EQS (Environmental Quality Standards) and SEPA EQS for regulation of aquaculture

Technical Guidance Manual for Licensing Discharges to Water: Annex G Environmental Quality Standards (EQS) List

http://www.sepa.org.uk/pdf/guidance/water/annexes/annex_g.pdf

Surface Water Abstraction Directive

UK EA Website

http://www.environment-agency.gov.uk/yourenv/eff/1190084/water/213872/577394/577773/?version=1&lang=_e

Water Supply (Water Quality) Regulations 2000: UK Government drinking water standards applicable at consumers tap

<http://www.opsi.gov.uk/si/si2000/20003184.htm>

Freshwater Fish Directive: UK government webpage

<http://www.environment-agency.gov.uk/yourenv/eff/1190084/water/213902/576076/>

1989 Drinking water Standards: UK government webpage

http://www.opsi.gov.uk/si/si1989/Uksi_19891147_en_12.htm

WHO: World Health Organisation drinking water standards

Petroleum Products in Drinking-water, Background document for development of WHO Guidelines for Drinking-water Quality, WHO (WHO/SDE/WSH/05.08/123)

http://www.who.int/water_sanitation_health/dwq/chemicals/Petroleum%20Productsrev071105.pdf

APPENDIX F: SOIL, LEACHATE AND GROUNDWATER SCREENING SUMMARY

Sample Point / Determinands	Relevant Commercial Quality Standards			BH101	BH102	BH 103	BH 104	BH 105	BH106	BH107	BH108	BH109	BH108
Depth	1% SOM	2.5% SOM	6% SOM	0.00-1.00	0.00-1.00	0.50-	0.50-	0.50-	0.50-	0.50-	0.50-	0.50-	3.60-
HEAVY METALS	mg/kg												
Antimony	7500 (4)			0.963	0.766	6.45	1.38	4.54	0.839	7.5	28.2	1.55	-
Arsenic	640			37.7	15.9	21.1	11.9	18.8	12.6	24.7	31.8	15.8	-
Barium	22000 (4)			88.6	122	199	120	142	85.4	112	318	133	-
Beryllium	420			0.909	0.806	2.1	1.21	1.08	0.808	1.25	1.13	1.15	-
Cadmium	230			0.59	0.51	0.72	0.52	0.56	0.03	1.88	1.81	0.08	-
Chromium (III)	30400			20.6	19.1	39.6	25.5	186	25.3	20.1	1460	27.8	-
Lead	750 (3)			106	171	225	67.4	123	45.7	458	414	135	-
Mercury (Inorganic)	3640			0.273	0.45	0.846	0.666	<0.14	0.219	0.541	0.282	0.946	-
Molybdenum	17000 (4)			1.49	0.697	1.86	0.573	1.38	0.693	1.57	31.5	0.85	-
Nickel	1800			20.9	22.8	61.3	36.9	8450.0	22.2	25.3	201.0	21.8	-
Selenium	13000			<1	<1	1.48	<1	<1	<1	<1	<1	<1	-
PHYTOTOXIC METALS	mg/kg												
Copper	71700			32.3	33.2	200	22.8	184	20	49.7	237	62	-
Zinc	665000			91.4	100	225	96.7	219	99.4	189	803	114	-
Boron	192000			1.38	1.05	1.67	<1	1.53	<1	<1	1.29	<1	-
ORGANICS	mg/kg												
Phenols	NA	NA	3200	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	-
Polycyclic Aromatic Hydrocarbons	mg/kg												
Naphthalene	200	480	1100	0.128	0.0293	0.0234	<0.009	<0.009	0.0447	0.0138	0.0464	0.0292	-
Acenaphthylene	84000	97000	100000	0.268	0.0479	0.0166	<0.012	<0.012	0.0517	<0.012	0.0781	<0.012	-
Acenaphthene	85000	98000	100000	0.0566	0.0289	<0.008	<0.008	<0.008	<0.008	<0.008	0.188	0.0116	-
Fluorene	64000	69000	71000	0.0811	0.0248	<0.01	<0.01	<0.01	0.0209	<0.01	0.17	<0.01	-
Phenanthrene	22000	22000	23000	0.858	0.477	0.112	<0.015	<0.015	0.242	<0.015	2.44	0.146	-
Anthracene	530000	540000	540000	0.361	0.188	0.0253	<0.016	<0.016	0.136	<0.016	0.671	0.0349	-
Fluoranthene	23000	23000	23000	3.12	1.07	0.224	<0.017	0.0398	1.04	<0.017	3.66	0.377	-
Pyrene	54000	54000	54000	3	0.886	0.193	<0.015	0.0335	1.09	<0.015	2.95	0.34	-
Benzo(a)anthracene	90	95	97	1.87	0.598	0.112	<0.014	<0.014	0.71	<0.014	1.56	0.177	-
Chrysene	140	140	140	1.42	0.534	0.135	<0.01	0.0172	0.643	<0.01	1.3	0.184	-
Benzo(b)fluoranthene	100	100	100	2.77	0.746	0.137	<0.015	0.0206	0.811	<0.015	1.73	0.189	-
Benzo(k)fluoranthene	140	140	140	0.935	0.258	0.0524	<0.014	<0.014	0.404	<0.014	0.744	0.0917	-
Benzo(a)pyrene	14	14	14	2.29	0.52	0.12	<0.015	0.0212	0.801	<0.015	1.59	0.17	-
Indeno(1,2,3-cd)pyrene	60	61	62	1.24	0.262	0.069	<0.018	<0.018	0.435	<0.018	0.85	0.103	-
Dibenzo(a,h)anthracene	13	13	13	0.338	0.0858	<0.023	<0.023	<0.023	0.145	<0.023	0.233	0.0292	-
Benzo(ghi)perylene	650	660	660	1.49	0.323	0.0903	<0.024	<0.024	0.507	<0.024	1.06	0.136	-
Total PAHs	NA	NA	NA	20.2	6.08	1.31	<0.118	0.132	7.08	<0.118	19.3	2.02	-
TPH	mg/kg												
Aliphatics													
EC C5-C6	3400	6200	13000	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-
EC>C6-C8	8300	18000	42000	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-
EC>C8-C10	2100	5100	12000	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-
EC>C10-C12	10000	24000	49000	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-
EC>C12-C16	61000	83000	91000	4.77	6.66	8.17	<0.1	7.83	18.7	3.41	4.7	2.25	-
EC>C16-C21	1000000	1000000	1000000	11.6	10.6	4.96	<0.1	13.2	18.9	2.43	10.7	1.44	-
EC>C21-C35	1000000	1000000	1000000	76.6	54.2	31.6	12	144	16.7	7.09	88.4	13.2	-
EC>C35-C44	1000000	1000000	1000000	38.5	34.1	15.7	<0.1	59.2	2.05	1.05	25.5	4.27	-
Total Aliphatics	NA	NA	NA	93	71.4	44.8	12	165	54.2	12.9	104	16.9	-
Aromatics													
EC C5-C7	28	50	95	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-
EC>C7-C8	59000	110000	190000	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-
EC>C8-C10	3700	8600	18000	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0148	<0.01	-
EC>C10-C12	17000	29000	34500	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-
EC>C12-C16	36000	37000	37800	5.92	5.48	4.3	<0.1	3.1	8.5	2.02	3	2.6	-
EC>C16-C21	28000	28000	28000	21	14.1	15	0.573	13.6	15.7	2.05	19.9	15.5	-
EC>C21-C35	28000	28000	28000	149	63.1	53.2	6.85	89.6	61.5	7.94	102	66.6	-
EC>C35-C44	28000	28000	28000	101	34.6	19.9	<0.1	38.8	19.1	3.73	39.7	29.5	-
Total Aromatics	NA	NA	NA	176	82.7	72.5	7.43	106	85.7	12	125	84.7	-
Total Hydrocarbons (C5-C44)	NA	NA	NA	408	223	153	19.4	369	161	29.7	294	135	-
MTBE	7900 (4)	13000 (4)	24000 (4)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-
Benzene	NA	NA	95	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-
Toluene	NA	NA	4400	<0.002	<0.002	0.00254	<0.002	<0.002	<0.002	<0.002	0.0057	<0.002	-
Ethylbenzene	NA	NA	2800	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.00342	<0.003	-
m,p-Xylenes	NA	NA	3200	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.00912	<0.006	-
o-Xylene	NA	NA	2600	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	-
INORGANICS	mg/kg												
W/S Sulphate as SO4 (g/l)	NA	NA	NA	0.933	0.0602	0.0768	1.57	0.233	0.0242	0.226	0.0526	0.053	-
Ammoniacal Nitrogen, exchangeable as NH4	NA	NA	NA	<15	<15	<15	<15	<15	<15	<15	<15	202	-
Free Cyanide	36 (5)			<1	<1	<1	<1	<1	<1	<1	<1	<1	-
pH (pH Units)	<5, >9			8.49	8.29	8.48	7.83	8.39	8.34	8.39	8.33	7.47	-
Asbestos													
Asbestos Screen	Presence			NFD	NFD	Chrysotile	NFD	NFD	NFD	NFD	Amosite	NFD	NFD
Fractional Organic Carbon													
Fractional Organic Carbon	NA	NA	NA	0.0111	0.0196	<0.1	0.00577	0.0168	0.0154	0.0454	<0.1	0.0194	-
SOM (%)	NA	NA	NA	1.914	3.379	17.241	0.995	2.897	2.655	7.828	17.241	3.345	-

1. CLEA Soil Guideline Value (CLEA v.1.06)
2. LQM CIEH GAC (2nd Edition)
3. SGV Report 10
4. EIC/AGS/CL-AIRE GAC (CLEA v.1.06)
5. Acute effects infant 1 dose 3g soil
%SOM = FOC (100/0.58)
NA: Not available
NFD: No ACM Detected
- Not analysed
NDP: No Detection Possible (see laboratory certificates)
ND: None Detected

Leachate Contamination Screen

Sample Point / Determinands	TSV	BH101	BH101	BH102	BH102	BH102	BH 103	BH 103	BH 104	BH 104	BH 104	BH 105	BH 105	BH106	BH106	BH107	BH107	BH108	BH109	
HEAVY METALS	ug/l	1.00-6.00	6.00-8.00	1.00-6.60	6.60-9.30	9.30-11.40	0.50-3.00	3.00-7.50	2.50	3.50	4.80	3.00	4.50	1.00-6.00	6.00-7.00	2.50-2.90	3.80-8.00	1.10-6.00	2.10-6.00	
Antimony	NA	4.729	<0.16	5.682	2.54	11.8	6.945	1.887	11.97	4.793	0.198	3.512	<0.16	1.164	1.492	0.632	10.94	3.592	24.42	
Arsenic	10 (2)	5.824	0.972	3.116	2.88	37.23	5.901	4.944	6.819	4.504	0.737	2.011	0.433	9.492	3.105	3.444	3.71	8.791	5.143	
Barium	100 (4)	139.2	37.19	41.97	511	108.3	175.5	256.4	250.8	72.52	13.28	142.2	22.19	4.64	92.61	366.8	64.28	266.1	92.97	
Beryllium	NA	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	
Cadmium	5 (1)	0.203	<0.1	0.157	<0.1	1.075	<0.1	<0.1	0.156	<0.1	<0.1	0.134	<0.1	<0.1	<0.1	0.384	0.157	<0.1	<0.1	
Chromium (total)	250 (1)	1.303	1.371	3.728	2.41	11.88	1.444	1.032	3.452	1.467	0.811	1.357	0.825	4.342	1.461	2.027	2.094	1.767	2.32	
Lead	250 (1)	0.295	0.161	0.706	0.051	0.919	0.175	0.174	0.244	0.146	8.066	0.05	0.079	0.069	0.454	0.36	0.743	0.4	0.513	
Mercury	1 (1)	<0.02	<0.02	<0.02	<0.02	3356	<0.02	<0.02	80.59	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Molybdenum	NA	94.69	22.12	85.85	32.1	179.9	36.64	21.71	65.34	74.07	0.869	93.69	0.375	10.76	8.531	17.09	128.8	19.69	49.88	
Nickel	200 (1)	6.728	1.456	3.262	2.49	7.099	3.804	4.791	8.307	3.976	2.065	6.883	2.448	2.012	3.233	217.3	22.26	5.321	4.437	
Selenium	10 (4)	5.019	2.756	1.919	1.22	41.2	2.867	5.135	1.864	1.581	1.478	0.897	0.961	4.464	4.287	6.033	2.902	1.679	2.54	
PHYTOTOXIC METALS	ug/l																			
Copper	1.28 (1)	8.21	1.946	11.13	1.34	23.04	5.118	3.472	3.004	1.382	1.623	4.341	2.434	10.5	12.15	3.103	6.014	2.752	16.29	
Zinc	75-500 (1)	17.45	0.669	11.88	4.95	13.79	19.08	1.293	3.073	6.167	1.18	1.582	9.833	0.565	5.779	24.72	57.53	4.094	16.02	
Boron	1000 (1)	354.8	42.41	835.7	353	1051	209.7	550.5	270.7	308.3	13.04	411.3	89.9	46.04	66.55	454	1288	978.3	1068	
ORGANICS	ug/l																			
Phenol	30 (1)	<0.5	<0.5	<0.5	6.64	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.26	<0.5	
Cresols	NA	<0.5	<0.5	<0.5	33.5	<0.5	<0.5	<0.5	<0.5	25.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.62	<0.5	1.19	<0.5	
Xylenols	NA	<0.5	<0.5	<0.5	19.9	<0.5	<0.5	0.88	<0.5	122	13.2	<0.5	<0.5	<0.5	<0.5	0.83	2.52	2.47	3.32	
1 Naphthol	NA	<0.5	<0.5	<0.5	11.7	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
2,3,5 Trimethyl-Phenol	NA	<0.5	<0.5	<0.5	18.3	<0.5	<0.5	0.93	<0.5	19.8	1.85	<0.5	<0.5	<0.5	<0.5	<0.5	2.81	2.62	2.37	
Phenols Total	30 (1)	<0.64	<0.64	<0.64	127	<0.64	<0.64	1.81	<0.64	197	20.4	<0.64	<0.64	<0.64	<0.64	<0.64	1.45	5.33	13.4	5.69
Aliphatics	ug/l																			
EC C5-C6	15000 (5)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
EC>C6-C8	15000 (5)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
EC>C8-C10	300 (5)	<10	<10	<10	22	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
EC>C10-C12	300 (5)	<10	<10	<10	89	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	11	<10	<10	<10	
EC>C12-C16	300 (5)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
EC>C16-C21	300 (5)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
EC>C21-C35	300 (5)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Total Aliphatics	NA	<10	<10	<10	121	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Aromatics	ug/l																			
EC C6-C7	30 (Benzene)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
EC>C7-C9	50 (Toluene)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
EC>C9-C10	20 (Ethylbenzene)	<10	<10	<10	17	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
EC>C10-C12	100 (5)	<10	<10	<10	59	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
EC>C12-C16	100 (5)	54	<10	<10	137	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	18	<10	14	<10	
EC>C16-C21	90 (5)	<10	<10	<10	76	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	20	<10	<10	<10	
EC>C21-C35	90 (5)	<10	<10	<10	21	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Total Aromatics	NA	<10	<10	<10	311	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Total TPH	NA	<10	<10	<10	432	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
BTEX	ug/l																			
MTBE	NA	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	
Benzene	30 (1)	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	
Toluene	50 (1)	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	
Ethylbenzene	20 (1)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
m & p Xylene	30 (1)	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	
o Xylene	30 (1)	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	
Polyaromatic Hydrocarbons	ug/l																			
Naphthalene (aq)	10 (1)	<0.1	0.197	<0.1	1.100	0.175	<0.1	<0.1	<0.1	<0.1	0.102	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Acenaphthene (aq)	NA	0.250	0.144	0.172	<0.075	0.180	0.019	<0.015	0.028	0.057	<0.015	0.038	0.028	0.066	0.026	0.064	0.324	0.870	0.107	
Acenaphthylene (aq)	NA	<0.011	0.013	<0.011	<0.055	0.015	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	0.017	0.035	<0.011	
Fluoranthene (aq)	0.02 (1)	0.161	0.073	0.257	<0.085	0.088	0.025	0.024	0.053	0.051	<0.017	0.209	<0.017	0.056	<0.017	0.044	0.213	0.525	0.098	
Anthracene (aq)	0.02 (1)	0.107	0.084	0.075	<0.075	0.092	<0.015	<0.015	<0.015	0.020	<0.015	0.082	<0.015	0.015	<0.015	<0.015	0.021	0.081	<0.015	
Phenanthrene (aq)	NA	0.022	0.610	<0.022	<0.11	0.301	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	
Fluorene (aq)	NA	0.244	0.197	0.113	<0.07	0.112	<0.014	<0.014	<0.014	0.042	<0.014	0.053	0.017	<0.014	<0.014	<0.014	0.089	0.378	0.014	
Chrysene (aq)	NA	0.014	0.021	0.023	<0.065	<0.013	<0.013	0.015	<0.013	<0.013	<0.013	0.038	<0.013	<0.013	<0.013	<0.013	0.018	0.034	0.016	
Pyrene (aq)	NA	0.120	0.083	0.203	<0.075	0.065	0.022	0.030	0.059	0.034	<0.015	0.162	<0.015	0.083	<0.015	0.081	0.189	0.420	0.117	
*Benzol(a)anthracene (aq)	NA	<0.017	<0.017	<0.017	<0.085	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.025	<0.017	
*Benzol(b)fluoranthene (aq)	NA	<0.023	<0.023	<0.023	<0.115	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	
*Benzol(k)fluoranthene (aq)	NA	<0.027	<0.027	<0.027	<0.135	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	
Benzol(a)pyrene (aq)	0.03(1)	<0.009	<0.009	0.011	<0.045	<0.0														

Groundwater Contamination Screen

Sample Point / Determinands	TSV	BH1	BH2	BH3	BH4	BH5	BH104
HEAVY METALS	ug/l	6.02	6.03	6.33	5.08	2.97	3.87
Antimony	NA	0.761	2.35	5.98	0.969	2.6	1.18
Arsenic	10 (2)	8.07	<0.12	<0.12	1.42	4.15	7.36
Barium	100 (4)	157	643	598	28.8	120	50.3
Beryllium	NA	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Cadmium	5 (1)	<0.1	0.281	0.194	<0.1	<0.1	<0.1
Chromium (total)	250 (1)	11.7	19.9	19.4	5	6.03	5.46
Lead	250 (1)	0.697	2.44	2.55	0.707	0.238	4.73
Mercury	1 (1)	0.592	<0.02	1.77	0.393	0.943	1.11
Molybdenum	NA	5.65	19.2	20.5	2.21	2.68	11.7
Nickel	200 (1)	7.51	16.8	13.6	11.3	7.25	18.8
Selenium	10 (4)	16	<0.39	<0.39	1.41	0.894	4.87
PHYTOTOXIC METALS	ug/l						
Copper	1-28 (1)	1.38	7.47	4.32	2.16	1.23	3.17
Zinc	75-500 (1)	7.58	26.8	38.4	17.8	10.6	8.52
Boron	1000 (1)	1770	997	2140	338	179	152
ORGANICS	ug/l						
Phenol	30 (1)	<0.5	0.64	<0.5	<0.5	<0.5	<0.5
Cresols	NA	<0.5	<0.5	<0.5	<0.5	<0.5	0.93
Xylenols	NA	<0.5	<0.5	0.97	<0.5	<0.5	<0.5
1 Naphthol	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,3,5 Trimethyl-Phenol	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenols Total	30 (1)	<0.64	0.64	0.97	<0.64	<0.64	1.59
Speciated TPH	ug/l						
Aliphatics							
EC C5-C6	15000 (5)	<10	<10	<10	<10	<10	<10
EC>C6-C8	15000 (5)	<10	<10	<10	<10	<10	<10
EC>C8-C10	300 (5)	<10	<10	<10	<10	<10	<10
EC>C10-C12	300 (5)	11	<10	<10	<10	<10	<10
EC>C12-C16	300 (5)	29	73	28	<10	28	23
EC>C16-C21	300* (5)	159	268	102	<10	108	244
EC>C21-C35	300* (5)	1970	2760	596	295	1470	2280
Aromatics							
EC C6-C7	30 (Benzene)	<10	<10	<10	<10	<10	<10
EC>C7-C8	50 (Toluene)	<10	<10	<10	<10	<10	<10
EC>C8-C10	20 (Ethylbenzene)	14	<10	<10	<10	<10	<10
EC>C10-C12	100 (5)	<10	<10	<10	<10	<10	<10
EC>C12-C16	100 (5)	30	44	50	<10	21	14
EC>C16-C21	90 (5)	100	512	307	1280	130	87
EC>C21-C35	90 (5)	576	2480	967	17200	871	555
Total TPH	NA	2930	6150	2060	18800	2640	3210
BTEX	ug/l						
MTBE	NA	<3	<3	<3	<3	<3	<3
Benzene	30 (1)	<7	<7	<7	<7	<7	<7
Toluene	50 (1)	<4	<4	<4	<4	<4	<4
Ethylbenzene	20 (1)	<5	<5	<5	<5	<5	<5
m & p Xylene	30 (1)	<8	<8	<8	<8	<8	<8
o Xylene	30 (1)	<3	<3	<3	<3	<3	<3
Polyaromatic Hydrocarbons	ug/l						
Naphthalene (aq)	10 (1)	0.404	0.67	1.35	0.107	0.204	0.213
Acenaphthene (aq)	NA	0.963	3.56	6.26	0.122	0.266	0.129
Acenaphthylene (aq)	NA	0.143	1.86	0.532	0.155	0.548	0.154
Fluoranthene (aq)	0.02 (1)	15.6	117	68.8	5.08	18.2	5.63
Anthracene (aq)	0.02 (1)	1.7	14.8	15.8	0.616	1.71	0.635
Phenanthrene (aq)	NA	9.69	39.5	41.9	1.55	5.28	2.52
Fluorene (aq)	NA	0.909	3.31	6.87	0.14	0.334	0.243
Chrysene (aq)	NA	10.4	83.1	46.3	4.22	15	6.1
Pyrene (aq)	NA	12.6	107	56.2	4.79	17.3	5.04
Benzo(a)anthracene (aq)	NA	9.57	83.2	46.4	4.1	14.1	4.36
*Benzo(b)fluoranthene (aq)	NA	13.5	96.6	44.8	5.42	20.6	9.58
*Benzo(k)fluoranthene (aq)	NA	12.2	90.9	53.4	5.23	18.7	6.97
Benzo(a)pyrene (aq)	0.03(1)	13.8	117	64.1	6.58	24	8.05
Dibenzo(a,h)anthracene (aq)	NA	3.35	22.6	11.3	1.31	4.74	1.88
*Benzo(g,h,i)perylene (aq)	NA	8.94	70.9	35.5	4.38	16.9	6.27
*Indeno(1,2,3-cd)pyrene (aq)	NA	8.18	66	31.4	4	15.2	5.47
Total 4 PAHs	0.1 (2)	42.82	324.4	165.1	19.03	71.4	28.29
Total 16 PAHs	NA	122	919	531	47.8	173	63.2
INORGANICS	mg/l						
Sulphate	400 (1)	171	372	610	879	122	834
Total Cyanide	0.05 (2)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Ammonia as NH4	0.3 (1)	4.95	24.8	45.1	0.633	0.696	7.68
Chloride	-	454	12000	7630	184	40.3	256
Total Alkalinity as CaCO3	NA	4840	1650	1270	4410	2140	14500
pH (pH Units)	6.0-9.0 (1)	7.46	7.02	7.42	7.39	7.21	6.96

1. Freshwater EQS
 2. UK Drinking Water Standard
 3. 1989 Drinking Water Standard
 4. Surface Water Abstraction Directive - DW1 limit
 5. Petroleum Products in Drinking-water, Background document for development of WHO Guidelines for Drinking-water Quality, WHO (WHO/SDE/WSH/05.08/123)
 6. Dutch integrated SRC value
- AA Annual Average

APPENDIX G: CHEMICAL ANALYSIS RESULTS



Mayer Brown Ltd
Lion House
Oriental Road
Woking
Surrey
GU22 8AR

Attention: Antony Platt

CERTIFICATE OF ANALYSIS

Date: 20 December 2012
Customer: H_MAYERBROW_WOK
Sample Delivery Group (SDG): 121207-92
Your Reference:
Location: Medina
Report No: 206604

We received 7 samples on Friday December 07, 2012 and 7 of these samples were scheduled for analysis which was completed on Thursday December 20, 2012. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan

Operations Manager





SDG:	121207-92	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	206604
Client Reference:		Attention:	Antony Platt	Superseded Report:	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
6623859	BH101		0.00 - 1.00	03/12/2012
6623860	BH101		1.00 - 6.00	03/12/2012
6623862	BH101		6.00 - 8.00	03/12/2012
6623863	BH102		0.00 - 1.00	03/12/2012
6623865	BH102		1.00 - 6.60	03/12/2012
6623866	BH102		6.60 - 9.30	03/12/2012
6623868	BH102		9.30 - 11.40	03/12/2012

Only received samples which have had analysis scheduled will be shown on the following pages.



SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

SOLID Results Legend <div> <div>X</div> Test </div> <div> <div>N</div> No Determination Possible </div>	Lab Sample No(s)		6623859	6623860	6623862	6623863	6623865	6623866	6623868
	Customer Sample Reference		BH101	BH101	BH101	BH102	BH102	BH102	BH102
	AGS Reference								
	Depth (m)		0.00 - 1.00	1.00 - 6.00	6.00 - 8.00	0.00 - 1.00	1.00 - 6.60	6.60 - 9.30	9.30 - 11.40
	Container		250g Amber Jar (AL 400g Tub (ALE214) 250g Amber Jar (AL 60g VOC (ALE215) 1kg TUB	250g Amber Jar (AL 400g Tub (ALE214) 250g Amber Jar (AL 60g VOC (ALE215) 1kg TUB	250g Amber Jar (AL 400g Tub (ALE214) 250g Amber Jar (AL 60g VOC (ALE215) 1kg TUB	250g Amber Jar (AL 400g Tub (ALE214) 250g Amber Jar (AL 60g VOC (ALE215) 1kg TUB	250g Amber Jar (AL 400g Tub (ALE214) 250g Amber Jar (AL 60g VOC (ALE215) 1kg TUB	250g Amber Jar (AL 400g Tub (ALE214) 250g Amber Jar (AL 60g VOC (ALE215) 1kg TUB	250g Amber Jar (AL 400g Tub (ALE214) 250g Amber Jar (AL 60g VOC (ALE215) 1kg TUB
Alkalinity Filtered as CaCO ₃	All	NDPs: 0 Tests: 5		X	X		X	X	X
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 5		X	X		X	X	X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2	X			X			
Anions by Kone (soil)	All	NDPs: 0 Tests: 2	X			X			
Anions by Kone (w)	All	NDPs: 0 Tests: 5		X	X		X	X	X
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 2	X			X			
Boron Water Soluble	All	NDPs: 0 Tests: 2	X			X			
CEN 2:1 Readings	All	NDPs: 0 Tests: 4		X	X		X		X
CEN 8:1 Readings	All	NDPs: 0 Tests: 4		X	X		X		X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7	X	X	X	X	X	X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 5		X	X		X	X	X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 5		X	X		X	X	X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 2	X			X			
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 5		X	X		X	X	X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 2	X			X			

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Page 4 of 66



SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

SOLID Results Legend <div><div>X</div> Test</div> <div><div>N</div> No Determination Possible</div>	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container	
	6623868		BH102				9.30 - 11.40		250g Amber Jar (AL)	
	6623866		BH102				6.60 - 9.30		250g Amber Jar (AL)	
	6623865		BH102				1.00 - 6.60		250g Amber Jar (AL)	
	6623863		BH102				0.00 - 1.00		60g VOC (ALE215)	
Metals by iCap-OES (Soil)	Selenium		NDPs: 0 Tests: 2						400g Tub (ALE214)	
	Zinc		NDPs: 0 Tests: 2						250g Amber Jar (AL)	
NRA Leachate	All		NDPs: 0 Tests: 1						1kg TUB	
PAH by GCMS	All		NDPs: 0 Tests: 2						250g Amber Jar (AL)	
PAH Spec MS - Aqueous (W)	All		NDPs: 0 Tests: 5						60g VOC (ALE215)	
pH	All		NDPs: 0 Tests: 2						400g Tub (ALE214)	
pH Value	All		NDPs: 0 Tests: 5						250g Amber Jar (AL)	
Phenols by HPLC (S)	All		NDPs: 0 Tests: 2						1kg TUB	
Sample description	All		NDPs: 0 Tests: 7						250g Amber Jar (AL)	
Total Organic Carbon	All		NDPs: 0 Tests: 2						60g VOC (ALE215)	
TPH CWG (W)	All		NDPs: 0 Tests: 5						400g Tub (ALE214)	
TPH CWG GC (S)	All		NDPs: 0 Tests: 2						250g Amber Jar (AL)	



SDG:	121207-92	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	206604
Client Reference:		Attention:	Antony Platt	Superseded Report:	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
6623859	BH101	0.00 - 1.00	Light Brown	Sandy Clay	0.063 - 0.1 mm	Stones	Brick
6623860	BH101	1.00 - 6.00	Dark Brown	Clay	0.063 - 0.1 mm	None	Stones
6623862	BH101	6.00 - 8.00	Green	Clay	0.063 - 0.1 mm	None	Stones
6623863	BH102	0.00 - 1.00	Light Brown	Clay	<0.063 mm	Stones	Brick
6623865	BH102	1.00 - 6.60	Dark Brown	Silty Clay	0.063 - 0.1 mm	None	Stones
6623866	BH102	6.60 - 9.30	Dark Brown	Sandy Clay	0.063 - 0.1 mm	None	Stones
6623868	BH102	9.30 - 11.40	Grey	Clay	<0.063 mm	N/A	N/A

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Results Legend		Customer Sample R	BH101	BH102	BH102			
#	ISO17025 accredited.							
M	mCERTS accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 1.00 Soil/Solid 03/12/2012 . 07/12/2012 121207-92 6623859	0.00 - 1.00 Soil/Solid 03/12/2012 . 07/12/2012 121207-92 6623863	6.60 - 9.30 Soil/Solid 03/12/2012 . 07/12/2012 121207-92 6623866			
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-4	@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
Ammoniacal Nitrogen, exchangeable as NH ₄	<15 mg/kg	TM024	<15 M	<15 M				
Alkalinity, Total as CaCO ₃ (diss.filt) NRA leach	<2 mg/l	TM043			135			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	<0.035 M				
Ammoniacal Nitrogen as NH ₃ NRA leach	<0.2 mg/l	TM099			0.987			
Ammoniacal Nitrogen as NH ₄ NRA leach	<0.3 mg/l	TM099			1.05			
Fraction Organic Carbon (FOC)	<0.002 -	TM132	0.0111 #	0.0196 #				
pH	1 pH Units	TM133	8.49 M	8.29 M				
Antimony (diss.filt) NRA leach	<0.00016 mg/l	TM152			0.00254			
Arsenic (diss.filt) NRA leach	<0.00012 mg/l	TM152			0.00288			
Barium (diss.filt) NRA leach	<0.00003 mg/l	TM152			0.511			
Beryllium (diss.filt) NRA leach	<0.00007 mg/l	TM152			<0.00007			
Boron (diss.filt) NRA leach	<0.0094 mg/l	TM152			0.353			
Cadmium (diss.filt) NRA leach	<0.0001 mg/l	TM152			<0.0001			
Chromium (diss.filt) NRA leach	<0.00022 mg/l	TM152			0.00241			
Copper (diss.filt) NRA leach	<0.00085 mg/l	TM152			0.00134			
Lead (diss.filt) NRA leach	<0.00002 mg/l	TM152			0.000051			
Molybdenum (diss.filt) NRA leach	<0.00024 mg/l	TM152			0.0321			
Nickel (diss.filt) NRA leach	<0.00015 mg/l	TM152			0.00249			
Selenium (diss.filt) NRA leach	<0.00039 mg/l	TM152			0.00122			
Zinc (diss.filt) NRA leach	<0.00041 mg/l	TM152			0.00495			
Cyanide, Free	<1 mg/kg	TM153	<1 M	<1 M				
Antimony	<0.6 mg/kg	TM181	0.963 #	0.766 #				
Arsenic	<0.6 mg/kg	TM181	37.7 M	15.9 M				
Barium	<0.6 mg/kg	TM181	88.6 #	122 #				
Beryllium	<0.01 mg/kg	TM181	0.909 M	0.806 M				
Cadmium	<0.02 mg/kg	TM181	0.591 M	0.512 M				
Chromium	<0.9 mg/kg	TM181	20.6 M	19.1 M				
Copper	<1.4 mg/kg	TM181	32.3 M	33.2 M				
Lead	<0.7 mg/kg	TM181	106 M	171 M				
Mercury	<0.14 mg/kg	TM181	0.273 M	0.45 M				
Molybdenum	<0.1 mg/kg	TM181	1.49 #	0.697 #				
Nickel	<0.2 mg/kg	TM181	20.9 M	22.8 M				

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Page 8 of 66

SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

[illegible]

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Page 10 of 66



CERTIFICATE OF ANALYSIS

SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample R	BH101	BH102			
#	ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4	@ Sample deviation (see appendix)						
Depth (m)	Sample Type	Date Sampled	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference	
Date Sampled	Sampled Time						
Component	LOD/Units	Method					
GRO Surrogate % recovery**	%	TM089	67	69			
GRO >C5-C12	<0.044 mg/kg	TM089	<0.044	<0.044			
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089	<0.005 #	<0.005 #			
Benzene	<0.01 mg/kg	TM089	<0.01 M	<0.01 M			
Toluene	<0.002 mg/kg	TM089	<0.002 M	<0.002 M			
Ethylbenzene	<0.003 mg/kg	TM089	<0.003 M	<0.003 M			
m,p-Xylene	<0.006 mg/kg	TM089	<0.006 M	<0.006 M			
o-Xylene	<0.003 mg/kg	TM089	<0.003 M	<0.003 M			
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089	<0.009	<0.009			
sum of detected BTEX by GC	<0.024 mg/kg	TM089	<0.024	<0.024			
Aliphatics >C5-C6	<0.01 mg/kg	TM089	<0.01	<0.01			
Aliphatics >C6-C8	<0.01 mg/kg	TM089	<0.01	<0.01			
Aliphatics >C8-C10	<0.01 mg/kg	TM089	<0.01	<0.01			
Aliphatics >C10-C12	<0.01 mg/kg	TM089	<0.01	<0.01			
Aliphatics >C12-C16	<0.1 mg/kg	TM173	4.77	6.66			
Aliphatics >C16-C21	<0.1 mg/kg	TM173	11.6	10.6			
Aliphatics >C21-C35	<0.1 mg/kg	TM173	76.6	54.2			
Aliphatics >C35-C44	<0.1 mg/kg	TM173	38.5	34.1			
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173	132	106			
Aromatics >EC5-EC7	<0.01 mg/kg	TM089	<0.01	<0.01			
Aromatics >EC7-EC8	<0.01 mg/kg	TM089	<0.01	<0.01			
Aromatics >EC8-EC10	<0.01 mg/kg	TM089	<0.01	<0.01			
Aromatics >EC10-EC12	<0.01 mg/kg	TM089	<0.01	<0.01			
Aromatics >EC12-EC16	<0.1 mg/kg	TM173	5.92	5.48			
Aromatics >EC16-EC21	<0.1 mg/kg	TM173	21	14.1			
Aromatics >EC21-EC35	<0.1 mg/kg	TM173	149	63.1			
Aromatics >EC35-EC44	<0.1 mg/kg	TM173	101	34.6			
Aromatics >EC40-EC44	<0.1 mg/kg	TM173	46.7	16.1			
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173	276	117			
Total Aliphatics >C5-35	<0.1 mg/kg	TM173	93	71.4			
Total Aromatics >C5-35	<0.1 mg/kg	TM173	176	82.7			
Total Aliphatics & Aromatics >C5-35	<0.1 mg/kg	TM173	269	154			

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Page 12 of 66



CERTIFICATE OF ANALYSIS

SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

TPH CWG (W)

Results Legend		Customer Sample R					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	BH102				
M	mCERTS accredited.						
aq	Aqueous / settled sample.		6.60 - 9.30				
diss.filt	Dissolved / filtered sample.		Soil/Solid				
tot.unfilt	Total / unfiltered sample.		03/12/2012				
*	Subcontracted test.		.				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		07/12/2012				
(F)	Trigger breach confirmed		121207-92				
1-4	@	Sample deviation (see appendix)		6623866				
Component	LOD/Units	Method					
GRO Surrogate % recovery** NRA leach	%	TM245	82				
Methyl tertiary butyl ether (MTBE) NRA leach	<0.003 mg/l	TM245	<0.003				
Benzene NRA leach	<0.007 mg/l	TM245	<0.007				
Toluene NRA leach	<0.004 mg/l	TM245	<0.004				
Ethylbenzene NRA leach	<0.005 mg/l	TM245	<0.005				
m,p-Xylene NRA leach	<0.008 mg/l	TM245	<0.008				
o-Xylene NRA leach	<0.003 mg/l	TM245	<0.003				
Sum of detected Xylenes NRA leach	<0.011 mg/l	TM245	<0.011				
Sum of detected BTEX NRA leach	<0.028 mg/l	TM245	<0.028				
Aliphatics >C5-C6 NRA leach	<0.01 mg/l	TM245	<0.01				
Aliphatics >C6-C8 NRA leach	<0.01 mg/l	TM245	<0.01				
Aliphatics >C8-C10 NRA leach	<0.01 mg/l	TM245	0.022				
Aliphatics >C10-C12 NRA leach	<0.01 mg/l	TM245	0.089				
Aliphatics >C12-C16 (aq) NRA leach	<0.01 mg/l	TM174	<0.01				
Aliphatics >C16-C21 (aq) NRA leach	<0.01 mg/l	TM174	<0.01				
Aliphatics >C21-C35 (aq) NRA leach	<0.01 mg/l	TM174	<0.01				
Total Aliphatics >C12-C35 (aq) NRA leach	<0.01 mg/l	TM174	<0.01				
Total Aliphatics & Aromatics >C12-C35	<0.01 mg/l	TM174	0.234				
Aromatics >EC5-EC7 NRA leach	<0.01 mg/l	TM245	<0.01				
Aromatics >EC7-EC8 NRA leach	<0.01 mg/l	TM245	<0.01				
Aromatics >EC8-EC10 NRA leach	<0.01 mg/l	TM245	0.017				
Aromatics >EC10-EC12 NRA leach	<0.01 mg/l	TM245	0.059				
Aromatics >EC12-EC16 (aq) NRA leach	<0.01 mg/l	TM174	0.137				
Aromatics >EC16-EC21 (aq) NRA leach	<0.01 mg/l	TM174	0.076				
Aromatics >EC21-EC35 (aq) NRA leach	<0.01 mg/l	TM174	0.021				
Total Aromatics >EC12-EC35 (aq) NRA	<0.01 mg/l	TM174	0.234				
Total Aliphatics >C5-C35 (aq) NRA leach	<0.01 mg/l	TM174	0.121				
Total Aromatics >C6-C35 (aq) NRA leach	<0.01 mg/l	TM174	0.311				
Total Aliphatics & Aromatics >C5-35 (aq)	<0.01 mg/l	TM174	0.432				
Total Aliphatics >C5-C12 NRA leach	<0.01 mg/l	TM245	0.121				
Total Aromatics >EC5-EC12 NRA leach	<0.01 mg/l	TM245	0.077				



SDG:

Job:

Client Reference:

121207-92
H_MAYERBROW_WOK-34

Location:

Customer:

Attention:

Medina
Mayer Brown Ltd
Antony Platt

Order Number:

Report Number:

Superseded Report:

R/PDEMEDINA.9
206604

Asbestos Identification - Soil

Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
------------------	-------------	----------	--------------------------	-----------------------------	-----------------------------	--------------------	-----------------------	-------------------	--------------------

Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH101 0.00 - 1.00 SOLID 03/12/2012 00:00:00 121207-92 6623859 TM048	19/12/12	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
---------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------	----------	--------------	---	------------------	------------------	------------------	------------------	------------------	--------------

Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH102 0.00 - 1.00 SOLID 03/12/2012 00:00:00 121207-92 6623863 TM048	19/12/12	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
---------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------	----------	--------------	---	------------------	------------------	------------------	------------------	------------------	--------------



CERTIFICATE OF ANALYSIS

SDG:	121207-92	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	206604
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.236	Moisture Content Ratio (%)	34.7
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	74.2
Particle Size <4mm	>95%		

Case SDG121207-92 Lab Sample Number(s)6623860 Sampled Date03-Dec-2012 Customer Sample Ref.BH101 Depth (m)1.00 - 6.00		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)		-	-	-
Loss on Ignition (%)		-	-	-
Sum of BTEX (mg/kg)		-	-	-
Sum of 7 PCBs (mg/kg)		-	-	-
Mineral Oil (mg/kg)		-	-	-
PAH Sum of 17 (mg/kg)		-	-	-
pH (pH Units)		-	-	-
ANC to pH 6 (mol/kg)		-	-	-
ANC to pH 4 (mol/kg)		-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 2:1 eluate	C ₈ Conc ⁿ in 8:1 eluate	A ₂ 2:1 conc ⁿ leached	A ₂₋₁₀ Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
Arsenic	0.00582	0.0153	0.0116	0.14	0.5	2	25
Barium	0.139	0.0167	0.278	0.334	20	100	300
Cadmium	0.000203	<0.0001	0.000406	<0.001	0.04	1	5
Chromium	0.0013	0.00164	0.0026	0.0159	0.5	10	70
Copper	0.00821	0.00334	0.0164	0.0401	2	50	100
Mercury Dissolved (CVAf)	-	-	-	-	0.01	0.2	2
Molybdenum	0.0947	0.0137	0.189	0.248	0.5	10	30
Nickel	0.00673	0.00179	0.0134	0.0247	0.4	10	40
Lead	0.000295	0.000145	0.00059	0.00166	0.5	10	50
Antimony	0.00473	0.00432	0.00945	0.0438	0.06	0.7	5
Selenium	0.00502	0.00229	0.01	0.0267	0.1	0.5	7
Zinc	0.0175	0.00042	0.0349	0.0276	4	50	200
Chloride	129	10.9	257	270	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	338	29.9	676	722	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	-	-	-	-	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information	2:1	8:1
Date Prepared	10-Dec-2012	11-Dec-2012
pH (pH Units)	7.633	9.815
Conductivity (µS/cm)	968.00	140.10
Temperature (°C)	19.50	16.00
Volume Leachant (Litres)	0.289	1.400
Volume of Eluate VE1 (Litres)	0.242	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
20/12/2012 16:17:35



CERTIFICATE OF ANALYSIS

SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.236	Moisture Content Ratio (%)	34.7
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	74.2
Particle Size <4mm	>95%		

Case		Landfill Waste Acceptance Criteria Limits		
SDG	121207-92	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Lab Sample Number(s)	6623860			
Sampled Date	03-Dec-2012			
Customer Sample Ref.	BH101			
Depth (m)	1.00 - 6.00			

Solid Waste Analysis

Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 2:1 eluate	C ₈ Conc ⁿ in 8:1 eluate	A ₂ 2:1 conc ⁿ leached	A ₂₋₁₀ Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
Mercury Unfiltered	<0.00002	<0.00002	<0.00004	<0.0002	-	-	-
Total Ammonia as NH3	2.22	0.282	4.43	5.47	-	-	-
Phenol by HPLC (W)	<0.0005	0.00077	<0.000999	0.00664	-	-	-
Total Ammonium as NH4	2.35	<0.3	4.7	3.22	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.0999	<0.5	-	-	-
Cresols by HPLC (W)	<0.0005	<0.0005	<0.000999	<0.005	-	-	-
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	-	-	-
Nitrate as N	1.08	<0.0677	2.16	1.48	-	-	-
Xylenols by HPLC (W)	<0.0005	<0.0005	<0.000999	<0.005	-	-	-
Napthol by HPLC (W)	<0.0005	<0.0005	<0.000999	<0.005	-	-	-
2,3,5 Trimethyl-Phenol by HPLC (W)	<0.0005	<0.0005	<0.000999	<0.005	-	-	-
Boron	0.355	0.157	0.709	1.84	-	-	-
Total Alkalinity Filtered as CaCO3	30	38.5	60	373	-	-	-
Phenols Total of 5 Speciated by HPLC (W)	<0.00064	0.00077	<0.00128	0.00664	-	-	-
PAH Spec MS - Aqueous (W)							
Napthalene by GCMS	<0.0001	<0.0001	<0.0002	<0.001	-	-	-
Acenaphthene by GCMS	0	0.000131	0.000499	0.00147	-	-	-
Acenaphthylene by GCMS	<0.000011	0.0000156	<0.000022	0.000135	-	-	-
Fluoranthene by GCMS	0	0.000202	0.000323	0.00196	-	-	-
Anthracene by GCMS	0	0.000103	0.000214	0.00104	-	-	-
Phenanthrene by GCMS	0	0.000476	0.0000445	0.00414	-	-	-
Fluorene by GCMS	0	0.000154	0.000488	0.00167	-	-	-
Chrysene by GCMS	0	0.0000287	0.0000278	0.000266	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	10-Dec-2012	11-Dec-2012
pH (pH Units)	7.633	9.815
Conductivity (µS/cm)	968.00	140.10
Temperature (°C)	19.50	16.00
Volume Leachant (Litres)	0.289	1.400
Volume of Eluate VE1 (Litres)	0.242	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
20/12/2012 16:17:35

16:17:29 20/12/2012



CERTIFICATE OF ANALYSIS

SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg)	0.236
Mass of dry sample (kg)	0.175
Particle Size <4mm	>95%

Site Location

Medina

Moisture Content Ratio (%)

34.7

Dry Matter Content Ratio (%)

74.2

Case

SDG	121207-92
Lab Sample Number(s)	6623860
Sampled Date	03-Dec-2012
Customer Sample Ref.	BH101
Depth (m)	1.00 - 6.00

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Total Organic Carbon (%)	-
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	-
Sum of 7 PCBs (mg/kg)	-
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	-
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Inert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Eluate Analysis

Eluate Analysis	C2 Conc ⁿ in 2:1 eluate	C8 Conc ⁿ in 8:1 eluate	A2 2:1 conc ⁿ leached	A2-10 Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
PAH Spec MS - Aqueous (W)							
Pyrene by GCMS	0	0.000153	0.000239	0.00148	-	-	-
Benz(a)anthracene by GCMS	<0.000017	<0.000017	<0.000034	<0.00017	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000023	<0.000023	<0.000046	<0.00023	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000027	<0.000027	<0.000054	<0.00027	-	-	-
Benzo(a)pyrene by GCMS	<0.000009	0.0000208	<0.000018	0.000179	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Benzo(ghi)perylene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000014	<0.000014	<0.000028	<0.00014	-	-	-
PAH 16 EPA Total by GCMS	0	0.00128	0.00183	0.0123	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	-	-	-	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.006	<0.03	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics & Aromatics >C12-C35	0.054	0.047	0.108	0.48	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information

2:1

8:1

Date Prepared	10-Dec-2012	11-Dec-2012
pH (pH Units)	7.633	9.815
Conductivity (µS/cm)	968.00	140.10
Temperature (°C)	19.50	16.00
Volume Leachant (Litres)	0.289	1.400
Volume of Eluate VE1 (Litres)	0.242	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

20/12/2012 16:17:35

16:17:29 20/12/2012



SDG:	121207-92	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	206604
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.236	Moisture Content Ratio (%)	34.7
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	74.2
Particle Size <4mm	>95%		

Case SDG121207-92 Lab Sample Number(s)6623860 Sampled Date03-Dec-2012 Customer Sample Ref.BH101 Depth (m)1.00 - 6.00		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Solid Waste Analysis				
Total Organic Carbon (%)		-	-	-
Loss on Ignition (%)		-	-	-
Sum of BTEX (mg/kg)		-	-	-
Sum of 7 PCBs (mg/kg)		-	-	-
Mineral Oil (mg/kg)		-	-	-
PAH Sum of 17 (mg/kg)		-	-	-
pH (pH Units)		-	-	-
ANC to pH 6 (mol/kg)		-	-	-
ANC to pH 4 (mol/kg)		-	-	-

Eluate Analysis	C2	Conc ⁿ in 2:1 eluate	C8	Conc ⁿ in 8:1 eluate	A2	2:1 conc ⁿ leached	A2-10	Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg			
	mg/l			mg/kg								
TPH CWG (W)												
Benzene by GC		<0.007		<0.007		<0.014		<0.07	-	-	-	
Toluene by GC		<0.004		<0.004		<0.00799		<0.04	-	-	-	
Ethylbenzene by GC		<0.005		<0.005		<0.00999		<0.05	-	-	-	
m & p Xylene by GC		<0.008		<0.008		<0.016		<0.08	-	-	-	
o Xylene by GC		<0.003		<0.003		<0.006		<0.03	-	-	-	
Sum m&p and o Xylene by GC		<0.011		<0.011		<0.022		<0.11	-	-	-	
Sum of BTEX by GC		<0.028		<0.028		<0.056		<0.28	-	-	-	
Aromatics >EC8 -EC10		<0.01		<0.01		<0.02		<0.1	-	-	-	
Aromatics >EC10-EC12		<0.01		<0.01		<0.02		<0.1	-	-	-	
Aromatics >EC12-EC16		0.054		0.019		0.108		0.238	-	-	-	
Aromatics >EC16-EC21		<0.01		0.028		<0.02		0.242	-	-	-	
Aromatics >EC21-EC35		<0.01		<0.01		<0.02		<0.1	-	-	-	
Total Aromatics >EC12-EC35		0.054		0.047		0.108		0.48	-	-	-	
Total Aliphatics >C5-C35 Aqueous		<0.01		<0.01		-		-	-	-	-	
Total Aromatics >C6-C35 Aqueous		<0.01		<0.01		-		-	-	-	-	
TPH (Total Aliphatics + Total Aromatics) >C5-C35		<0.01		<0.01		-		-	-	-	-	
Total Aliphatics C5-C12		<0.01		<0.01		<0.02		<0.1	-	-	-	
Total Aromatics C6-C12		<0.01		<0.01		<0.02		<0.1	-	-	-	

Leach Test Information	2:1	8:1
Date Prepared	10-Dec-2012	11-Dec-2012
pH (pH Units)	7.633	9.815
Conductivity (µS/cm)	968.00	140.10
Temperature (°C)	19.50	16.00
Volume Leachant (Litres)	0.289	1.400
Volume of Eluate VE1 (Litres)	0.242	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
20/12/2012 16:17:35



SDG:	121207-92	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	206604
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.227	Moisture Content Ratio (%)	29.3
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	77.3
Particle Size <4mm	>95%		

Case SDG121207-92 Lab Sample Number(s)6623862 Sampled Date03-Dec-2012 Customer Sample Ref.BH101 Depth (m)6.00 - 8.00		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Solid Waste Analysis				
Total Organic Carbon (%)		-	-	-
Loss on Ignition (%)		-	-	-
Sum of BTEX (mg/kg)		-	-	-
Sum of 7 PCBs (mg/kg)		-	-	-
Mineral Oil (mg/kg)		-	-	-
PAH Sum of 17 (mg/kg)		-	-	-
pH (pH Units)		-	-	-
ANC to pH 6 (mol/kg)		-	-	-
ANC to pH 4 (mol/kg)		-	-	-

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
Arsenic	0.000972	0.000882	0.00195	0.00893	0.5	2	25
Barium	0.0372	0.0246	0.0744	0.26	20	100	300
Cadmium	<0.0001	<0.0001	<0.0002	<0.001	0.04	1	5
Chromium	0.00137	0.000703	0.00274	0.0078	0.5	10	70
Copper	0.00195	<0.00085	0.0039	<0.0085	2	50	100
Mercury Dissolved (CVAf)	-	-	-	-	0.01	0.2	2
Molybdenum	0.0221	0.0139	0.0443	0.149	0.5	10	30
Nickel	0.00146	0.000591	0.00291	0.00691	0.4	10	40
Lead	0.000161	0.000153	0.000322	0.00154	0.5	10	50
Antimony	<0.00016	0.000764	<0.00032	0.00676	0.06	0.7	5
Selenium	0.00276	0.00133	0.00552	0.0149	0.1	0.5	7
Zinc	0.000669	0.000734	0.00134	0.00727	4	50	200
Chloride	30.9	3.1	61.8	63.1	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	242	32.2	484	564	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	-	-	-	-	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information	2:1	8:1
Date Prepared	10-Dec-2012	11-Dec-2012
pH (pH Units)	8.318	7.857
Conductivity (µS/cm)	604.00	443.00
Temperature (°C)	18.90	18.40
Volume Leachant (Litres)	0.299	1.400
Volume of Eluate VE1 (Litres)	0.202	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
20/12/2012 16:17:35



SDG:	121207-92	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	206604
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.227	Moisture Content Ratio (%)	29.3
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	77.3
Particle Size <4mm	>95%		

<div>Case</div> <div>SDG121207-92</div> <div>Lab Sample Number(s)6623862</div> <div>Sampled Date03-Dec-2012</div> <div>Customer Sample Ref.BH101</div> <div>Depth (m)6.00 - 8.00</div> <div>Solid Waste Analysis</div> <div>Total Organic Carbon (%) -</div> <div>Loss on Ignition (%) -</div> <div>Sum of BTEX (mg/kg) -</div> <div>Sum of 7 PCBs (mg/kg) -</div> <div>Mineral Oil (mg/kg) -</div> <div>PAH Sum of 17 (mg/kg) -</div> <div>pH (pH Units) -</div> <div>ANC to pH 6 (mol/kg) -</div> <div>ANC to pH 4 (mol/kg) -</div>		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
Mercury Unfiltered	<0.00002	<0.00002	<0.00004	<0.0002	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<0.4	<2	-	-	-
Phenol by HPLC (W)	<0.0005	0.00126	<0.001	0.0111	-	-	-
Total Ammonium as NH4	<0.3	<0.3	<0.6	<3	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.1	<0.5	-	-	-
Cresols by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	-	-	-
Nitrate as N	0.526	<0.0677	1.05	<0.677	-	-	-
Xylenols by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Napthol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
2,3,5 Trimethyl-Phenol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Boron	0.0424	0.0326	0.0849	0.337	-	-	-
Total Alkalinity Filtered as CaCO3	55	43	110	444	-	-	-
Phenols Total of 5 Speciated by HPLC (W)	<0.00064	0.00126	<0.00128	0.0111	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0	0.000119	0.000395	0.00128	-	-	-
Acenaphthene by GCMS	0	0.0000807	0.000288	0.00088	-	-	-
Acenaphthylene by GCMS	0	0.0000115	0.0000256	0.000116	-	-	-
Fluoranthene by GCMS	0	0.0000726	0.000146	0.000727	-	-	-
Anthracene by GCMS	0	0.0000487	0.000168	0.000528	-	-	-
Phenanthrene by GCMS	0	0.000274	0.00122	0.00313	-	-	-
Fluorene by GCMS	0	0.0000776	0.000395	0.000914	-	-	-
Chrysene by GCMS	0	<0.000013	0.0000423	<0.00013	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	10-Dec-2012	11-Dec-2012
pH (pH Units)	8.318	7.857
Conductivity (µS/cm)	604.00	443.00
Temperature (°C)	18.90	18.40
Volume Leachant (Litres)	0.299	1.400
Volume of Eluate VE1 (Litres)	0.202	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
20/12/2012 16:17:35



CERTIFICATE OF ANALYSIS

SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.227	Moisture Content Ratio (%)	29.3
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	77.3
Particle Size <4mm	>95%		

Case	Landfill Waste Acceptance Criteria Limits		
SDG	121207-92		
Lab Sample Number(s)	6623862		
Sampled Date	03-Dec-2012		
Customer Sample Ref.	BH101		
Depth (m)	6.00 - 8.00		
Solid Waste Analysis			
Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	C ₂	Conc ⁿ in 2:1 eluate	C ₈	Conc ⁿ in 8:1 eluate	A ₂	2:1 conc ⁿ leached	A ₂₋₁₀	Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l				mg/kg						
PAH Spec MS - Aqueous (W)											
Pyrene by GCMS		0		0.0000543		0.000166		0.000576	-	-	-
Benz(a)anthracene by GCMS		<0.000017		<0.000017		<0.000034		<0.00017	-	-	-
Benzo(b)fluoranthene by GCMS		<0.000023		<0.000023		<0.000046		<0.00023	-	-	-
Benzo(k)fluoranthene by GCMS		<0.000027		<0.000027		<0.000054		<0.00027	-	-	-
Benzo(a)pyrene by GCMS		<0.000009		<0.000009		<0.000018		<0.00009	-	-	-
Dibenzo(ah)anthracene by GCMS		<0.000016		<0.000016		<0.000032		<0.00016	-	-	-
Benzo(ghi)perylene by GCMS		<0.000016		<0.000016		<0.000032		<0.00016	-	-	-
Indeno(123cd)pyrene by GCMS		<0.000014		<0.000014		<0.000028		<0.00014	-	-	-
PAH 16 EPA Total by GCMS		0		0.000738		0.00285		0.00817	-	-	-
TPH CWG (W)											
Surrogate Recovery		-		0		-		0	-	-	-
MTBE GC-FID		<0.003		<0.003		<0.006		<0.03	-	-	-
Aliphatics C5-C6		<0.01		<0.01		<0.02		<0.1	-	-	-
Aliphatics >C6-C8		<0.01		<0.01		<0.02		<0.1	-	-	-
Aliphatics >C8-C10		<0.01		<0.01		<0.02		<0.1	-	-	-
Aliphatics >C10-C12		<0.01		<0.01		<0.02		<0.1	-	-	-
Aliphatics >C12-C16		<0.01		<0.01		<0.02		<0.1	-	-	-
Aliphatics >C16-C21		<0.01		<0.01		<0.02		<0.1	-	-	-
Aliphatics >C21-C35		<0.01		<0.01		<0.02		<0.1	-	-	-
Total Aliphatics >C12-C35		<0.01		<0.01		<0.02		<0.1	-	-	-
Total Aliphatics & Aromatics >C12-C35		<0.01		<0.01		<0.02		<0.1	-	-	-
Aromatics C6-C7		<0.01		<0.01		<0.02		<0.1	-	-	-
Aromatics >C7-C8		<0.01		<0.01		<0.02		<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	10-Dec-2012	11-Dec-2012
pH (pH Units)	8.318	7.857
Conductivity (µS/cm)	604.00	443.00
Temperature (°C)	18.90	18.40
Volume Leachant (Litres)	0.299	1.400
Volume of Eluate VE1 (Litres)	0.202	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
20/12/2012 16:17:35

16:17:29 20/12/2012



SDG:	121207-92	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	206604
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.227	Moisture Content Ratio (%)	29.3
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	77.3
Particle Size <4mm	>95%		

<div>Case</div> <div>SDG121207-92</div> <div>Lab Sample Number(s)6623862</div> <div>Sampled Date03-Dec-2012</div> <div>Customer Sample Ref.BH101</div> <div>Depth (m)6.00 - 8.00</div> <div>Solid Waste Analysis</div> <div>Total Organic Carbon (%) -</div> <div>Loss on Ignition (%) -</div> <div>Sum of BTEX (mg/kg) -</div> <div>Sum of 7 PCBs (mg/kg) -</div> <div>Mineral Oil (mg/kg) -</div> <div>PAH Sum of 17 (mg/kg) -</div> <div>pH (pH Units) -</div> <div>ANC to pH 6 (mol/kg) -</div> <div>ANC to pH 4 (mol/kg) -</div>		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
TPH CWG (W)							
Benzene by GC	<0.007	<0.007	<0.014	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.00801	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.01	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.016	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.006	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.022	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.056	<0.28	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics >C5-C35 Aqueous	<0.01	<0.01	-	-	-	-	-
Total Aromatics >C6-C35 Aqueous	<0.01	<0.01	-	-	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	-	-	-	-	-
Total Aliphatics C5-C12	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aromatics C6-C12	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	10-Dec-2012	11-Dec-2012
pH (pH Units)	8.318	7.857
Conductivity (µS/cm)	604.00	443.00
Temperature (°C)	18.90	18.40
Volume Leachant (Litres)	0.299	1.400
Volume of Eluate VE1 (Litres)	0.202	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
20/12/2012 16:17:35



SDG:	121207-92	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	206604
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.233	Moisture Content Ratio (%)	33.1
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	75.2
Particle Size <4mm	>95%		

Case SDG121207-92 Lab Sample Number(s)6623865 Sampled Date03-Dec-2012 Customer Sample Ref.BH102 Depth (m)1.00 - 6.60		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 2:1 eluate	C ₈ Conc ⁿ in 8:1 eluate	A ₂ 2:1 conc ⁿ leached	A ₂₋₁₀ Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
Arsenic	0.00312	0.0019	0.00623	0.0203	0.5	2	25
Barium	0.042	0.0407	0.0839	0.409	20	100	300
Cadmium	0.000157	<0.0001	0.000314	<0.001	0.04	1	5
Chromium	0.00373	0.00114	0.00745	0.0142	0.5	10	70
Copper	0.0111	0.00323	0.0223	0.0409	2	50	100
Mercury Dissolved (CVAf)	-	-	-	-	0.01	0.2	2
Molybdenum	0.0859	0.0179	0.172	0.253	0.5	10	30
Nickel	0.00326	0.00159	0.00652	0.0177	0.4	10	40
Lead	0.000706	0.000401	0.00141	0.00434	0.5	10	50
Antimony	0.00568	0.00505	0.0114	0.0511	0.06	0.7	5
Selenium	0.00192	0.000605	0.00384	0.00748	0.1	0.5	7
Zinc	0.0119	0.00119	0.0238	0.0235	4	50	200
Chloride	46.7	2	93.4	68.5	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	141	77	283	840	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	-	-	-	-	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information	2:1	8:1
Date Prepared	10-Dec-2012	11-Dec-2012
pH (pH Units)	8.733	8.261
Conductivity (µS/cm)	636.00	310.00
Temperature (°C)	19.40	20.10
Volume Leachant (Litres)	0.292	1.400
Volume of Eluate VE1 (Litres)	0.232	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
20/12/2012 16:17:35



CERTIFICATE OF ANALYSIS

SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.233	Moisture Content Ratio (%)	33.1
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	75.2
Particle Size <4mm	>95%		

Case		Landfill Waste Acceptance Criteria Limits		
SDG	121207-92	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Lab Sample Number(s)	6623865			
Sampled Date	03-Dec-2012			
Customer Sample Ref.	BH102			
Depth (m)	1.00 - 6.60			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 2:1 eluate	C ₈ Conc ⁿ in 8:1 eluate	A ₂ 2:1 conc ⁿ leached	A ₂₋₁₀ Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
Mercury Unfiltered	<0.00002	<0.00002	<0.00004	<0.0002	-	-	-
Total Ammonia as NH3	2.4	0.555	4.79	7.55	-	-	-
Phenol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Total Ammonium as NH4	2.53	0.588	5.06	7.98	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.1	<0.5	-	-	-
Cresols by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	-	-	-
Nitrate as N	<0.0677	0.0728	<0.135	<0.677	-	-	-
Xylenols by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Napthol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
2,3,5 Trimethyl-Phenol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Boron	0.836	0.275	1.67	3.36	-	-	-
Total Alkalinity Filtered as CaCO3	165	95	330	1030	-	-	-
Phenols Total of 5 Speciated by HPLC (W)	<0.00064	<0.00064	<0.00128	<0.0064	-	-	-
PAH Spec MS - Aqueous (W)							
Napthalene by GCMS	<0.0001	<0.0001	<0.0002	<0.001	-	-	-
Acenaphthene by GCMS	0	0.000242	0.000343	0.00234	-	-	-
Acenaphthylene by GCMS	<0.000011	0	<0.000022	<0.00011	-	-	-
Fluoranthene by GCMS	0	0.000263	0.000514	0.00262	-	-	-
Anthracene by GCMS	0	0.000153	0.00015	0.00145	-	-	-
Phenanthrene by GCMS	<0.000022	0.000551	<0.000044	0.00491	-	-	-
Fluorene by GCMS	0	0.000163	0.000226	0.00157	-	-	-
Chrysene by GCMS	0	0.0000297	0.000046	0.000289	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	10-Dec-2012	11-Dec-2012
pH (pH Units)	8.733	8.261
Conductivity (µS/cm)	636.00	310.00
Temperature (°C)	19.40	20.10
Volume Leachant (Litres)	0.292	1.400
Volume of Eluate VE1 (Litres)	0.232	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
20/12/2012 16:17:35

16:17:29 20/12/2012



CERTIFICATE OF ANALYSIS

SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.233	Moisture Content Ratio (%)	33.1
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	75.2
Particle Size <4mm	>95%		

Case		Landfill Waste Acceptance Criteria Limits		
SDG	121207-92	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Lab Sample Number(s)	6623865			
Sampled Date	03-Dec-2012			
Customer Sample Ref.	BH102			
Depth (m)	1.00 - 6.60			

Solid Waste Analysis

Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	C ₂	Conc ⁿ in 2:1 eluate	C ₈	Conc ⁿ in 8:1 eluate	A ₂	2:1 conc ⁿ leached	A ₂₋₁₀	Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg			
	mg/l				mg/kg							
PAH Spec MS - Aqueous (W)												
Pyrene by GCMS		0		0.000202		0.000407		0.00202		-	-	-
Benz(a)anthracene by GCMS		<0.000017		0		<0.000034		<0.00017		-	-	-
Benzo(b)fluoranthene by GCMS		<0.000023		<0.000023		<0.000046		<0.00023		-	-	-
Benzo(k)fluoranthene by GCMS		<0.000027		<0.000027		<0.000054		<0.00027		-	-	-
Benzo(a)pyrene by GCMS		0		0.0000206		0.0000223		0.000196		-	-	-
Dibenzo(ah)anthracene by GCMS		<0.000016		<0.000016		<0.000032		<0.00016		-	-	-
Benzo(ghi)perylene by GCMS		<0.000016		<0.000016		<0.000032		<0.00016		-	-	-
Indeno(123cd)pyrene by GCMS		<0.000014		<0.000014		<0.000028		<0.00014		-	-	-
PAH 16 EPA Total by GCMS		0		0.00165		0.00171		0.0157		-	-	-
TPH CWG (W)												
Surrogate Recovery		-		-		-		-		-	-	-
MTBE GC-FID		<0.003		<0.003		<0.006		<0.03		-	-	-
Aliphatics C5-C6		<0.01		<0.01		<0.02		<0.1		-	-	-
Aliphatics >C6-C8		<0.01		<0.01		<0.02		<0.1		-	-	-
Aliphatics >C8-C10		<0.01		<0.01		<0.02		<0.1		-	-	-
Aliphatics >C10-C12		<0.01		<0.01		<0.02		<0.1		-	-	-
Aliphatics >C12-C16		<0.01		<0.01		<0.02		<0.1		-	-	-
Aliphatics >C16-C21		<0.01		<0.01		<0.02		<0.1		-	-	-
Aliphatics >C21-C35		<0.01		<0.01		<0.02		<0.1		-	-	-
Total Aliphatics >C12-C35		<0.01		<0.01		<0.02		<0.1		-	-	-
Total Aliphatics & Aromatics >C12-C35		<0.01		<0.01		<0.02		<0.1		-	-	-
Aromatics C6-C7		<0.01		<0.01		<0.02		<0.1		-	-	-
Aromatics >C7-C8		<0.01		<0.01		<0.02		<0.1		-	-	-

Leach Test Information	2:1	8:1
Date Prepared	10-Dec-2012	11-Dec-2012
pH (pH Units)	8.733	8.261
Conductivity (µS/cm)	636.00	310.00
Temperature (°C)	19.40	20.10
Volume Leachant (Litres)	0.292	1.400
Volume of Eluate VE1 (Litres)	0.232	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
20/12/2012 16:17:35

16:17:29 20/12/2012



CERTIFICATE OF ANALYSIS

SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg)	0.233
Mass of dry sample (kg)	0.175
Particle Size <4mm	>95%

Site Location

Medina

Moisture Content Ratio (%)	33.1
Dry Matter Content Ratio (%)	75.2

Case

SDG	121207-92
Lab Sample Number(s)	6623865
Sampled Date	03-Dec-2012
Customer Sample Ref.	BH102
Depth (m)	1.00 - 6.60

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Total Organic Carbon (%)	-
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	-
Sum of 7 PCBs (mg/kg)	-
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	-
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Inert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Eluate Analysis

Eluate Analysis	C2	Conc ⁿ in 2:1 eluate	C8	Conc ⁿ in 8:1 eluate	A2	2:1 conc ⁿ leached	A2-10	Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg			
	mg/l				mg/kg							
TPH CWG (W)												
Benzene by GC		<0.007		<0.007		<0.014		<0.07	-	-	-	
Toluene by GC		<0.004		<0.004		<0.008		<0.04	-	-	-	
Ethylbenzene by GC		<0.005		<0.005		<0.01		<0.05	-	-	-	
m & p Xylene by GC		<0.008		<0.008		<0.016		<0.08	-	-	-	
o Xylene by GC		<0.003		<0.003		<0.006		<0.03	-	-	-	
Sum m&p and o Xylene by GC		<0.011		<0.011		<0.022		<0.11	-	-	-	
Sum of BTEX by GC		<0.028		<0.028		<0.056		<0.28	-	-	-	
Aromatics >EC8 -EC10		<0.01		<0.01		<0.02		<0.1	-	-	-	
Aromatics >EC10-EC12		<0.01		<0.01		<0.02		<0.1	-	-	-	
Aromatics >EC12-EC16		<0.01		<0.01		<0.02		<0.1	-	-	-	
Aromatics >EC16-EC21		<0.01		<0.01		<0.02		<0.1	-	-	-	
Aromatics >EC21-EC35		<0.01		<0.01		<0.02		<0.1	-	-	-	
Total Aromatics >EC12-EC35		<0.01		<0.01		<0.02		<0.1	-	-	-	
Total Aliphatics >C5-C35 Aqueous		<0.01		<0.01		-		-	-	-	-	
Total Aromatics >C6-C35 Aqueous		<0.01		<0.01		-		-	-	-	-	
TPH (Total Aliphatics + Total Aromatics) >C5-C35		<0.01		<0.01		-		-	-	-	-	
Total Aliphatics C5-C12		<0.01		<0.01		<0.02		<0.1	-	-	-	
Total Aromatics C6-C12		<0.01		<0.01		<0.02		<0.1	-	-	-	

Leach Test Information

	2:1	8:1
Date Prepared	10-Dec-2012	11-Dec-2012
pH (pH Units)	8.733	8.261
Conductivity (µS/cm)	636.00	310.00
Temperature (°C)	19.40	20.10
Volume Leachant (Litres)	0.292	1.400
Volume of Eluate VE1 (Litres)	0.232	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
20/12/2012 16:17:35

16:17:29 20/12/2012



SDG:	121207-92	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	206604
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.275	Moisture Content Ratio (%)	57.2
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	63.6
Particle Size <4mm	>95%		

Case SDG121207-92 Lab Sample Number(s)6623868 Sampled Date03-Dec-2012 Customer Sample Ref.BH102 Depth (m)9.30 - 11.40		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)		-	-	-
Loss on Ignition (%)		-	-	-
Sum of BTEX (mg/kg)		-	-	-
Sum of 7 PCBs (mg/kg)		-	-	-
Mineral Oil (mg/kg)		-	-	-
PAH Sum of 17 (mg/kg)		-	-	-
pH (pH Units)		-	-	-
ANC to pH 6 (mol/kg)		-	-	-
ANC to pH 4 (mol/kg)		-	-	-

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
Arsenic	0.0372	0.0271	0.0745	0.282	0.5	2	25
Barium	0.108	0.00753	0.217	0.186	20	100	300
Cadmium	0.00108	0.000149	0.00215	0.00251	0.04	1	5
Chromium	0.0119	0.00286	0.0238	0.0385	0.5	10	70
Copper	0.023	0.00517	0.0461	0.0713	2	50	100
Mercury Dissolved (CVAf)	-	-	-	-	0.01	0.2	2
Molybdenum	0.18	0.0637	0.36	0.765	0.5	10	30
Nickel	0.0071	0.00422	0.0142	0.0454	0.4	10	40
Lead	0.000919	0.00066	0.00184	0.00688	0.5	10	50
Antimony	0.0118	0.00717	0.0236	0.0767	0.06	0.7	5
Selenium	0.0412	0.00812	0.0824	0.118	0.1	0.5	7
Zinc	0.0138	0.00441	0.0276	0.0544	4	50	200
Chloride	4130	672	8260	10500	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	253	70.4	505	904	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	-	-	-	-	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information	2:1	8:1
Date Prepared	10-Dec-2012	11-Dec-2012
pH (pH Units)	8.530	8.417
Conductivity (µS/cm)	11,120.00	2,090.00
Temperature (°C)	18.90	19.90
Volume Leachant (Litres)	0.250	1.400
Volume of Eluate VE1 (Litres)	0.192	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
20/12/2012 16:17:35



CERTIFICATE OF ANALYSIS

SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg)	0.275
Mass of dry sample (kg)	0.175
Particle Size <4mm	>95%

Site Location

Medina

Moisture Content Ratio (%)

57.2

Dry Matter Content Ratio (%)

63.6

Case

SDG	121207-92
Lab Sample Number(s)	6623868
Sampled Date	03-Dec-2012
Customer Sample Ref.	BH102
Depth (m)	9.30 - 11.40

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Total Organic Carbon (%)	-
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	-
Sum of 7 PCBs (mg/kg)	-
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	-
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Inert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Eluate Analysis

Eluate Analysis	C2	Conc ⁿ in 2:1 eluate	C8	Conc ⁿ in 8:1 eluate	A2	2:1 conc ⁿ leached	A2-10	Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	mg/l			mg/kg					
Mercury Unfiltered		3.36		<0.00002		6.72		<0.0002	- - -
Total Ammonia as NH3		9.22		1.59		18.5		24.3	- - -
Phenol by HPLC (W)		<0.0005		0.00075		<0.001		0.00668	- - -
Total Ammonium as NH4		9.77		1.68		19.5		25.7	- - -
Total Cyanide (W)		<0.05		<0.05		<0.1		<0.5	- - -
Cresols by HPLC (W)		<0.0005		<0.0005		<0.001		<0.005	- - -
Beryllium		<0.00007		<0.00007		<0.00014		<0.0007	- - -
Nitrate as N		<0.0677		<0.0677		<0.135		<0.677	- - -
Xylenols by HPLC (W)		<0.0005		<0.0005		<0.001		<0.005	- - -
Napthol by HPLC (W)		<0.0005		<0.0005		<0.001		<0.005	- - -
2,3,5 Trimethyl-Phenol by HPLC (W)		<0.0005		<0.0005		<0.001		<0.005	- - -
Boron		1.05		0.654		2.1		6.98	- - -
Total Alkalinity Filtered as CaCO3		386000		110		772000		424000	- - -
Phenols Total of 5 Speciated by HPLC (W)		<0.00064		0.00075		<0.00128		0.00668	- - -
PAH Spec MS - Aqueous (W)									
Napthalene by GCMS		0		0.000127		0.000351		0.00132	- - -
Acenaphthene by GCMS		0		0.000076		0.00036		0.000874	- - -
Acenaphthylene by GCMS		0		0.0000117		0.0000301		0.000121	- - -
Fluoranthene by GCMS		0		0.000271		0.000176		0.00251	- - -
Anthracene by GCMS		0		0.0000155		0.000184		0.000239	- - -
Phenanthrene by GCMS		0		0.0000509		0.000601		0.000783	- - -
Fluorene by GCMS		0		0.0000295		0.000224		0.000386	- - -
Chrysene by GCMS		<0.000013		0.000101		<0.000026		0.000895	- - -

Leach Test Information

	2:1	8:1
Date Prepared	10-Dec-2012	11-Dec-2012
pH (pH Units)	8.530	8.417
Conductivity (µS/cm)	11,120.00	2,090.00
Temperature (°C)	18.90	19.90
Volume Leachant (Litres)	0.250	1.400
Volume of Eluate VE1 (Litres)	0.192	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

20/12/2012 16:17:35

16:17:29 20/12/2012



CERTIFICATE OF ANALYSIS

SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg) 0.275

Mass of dry sample (kg) 0.175

Particle Size <4mm >95%

Site Location

Medina

Moisture Content Ratio (%) 57.2

Dry Matter Content Ratio (%) 63.6

Case

SDG 121207-92

Lab Sample Number(s) 6623868

Sampled Date 03-Dec-2012

Customer Sample Ref. BH102

Depth (m) 9.30 - 11.40

Landfill Waste Acceptance
Criteria LimitsInert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Solid Waste Analysis

Total Organic Carbon (%) -

Loss on Ignition (%) -

Sum of BTEX (mg/kg) -

Sum of 7 PCBs (mg/kg) -

Mineral Oil (mg/kg) -

PAH Sum of 17 (mg/kg) -

pH (pH Units) -

ANC to pH 6 (mol/kg) -

ANC to pH 4 (mol/kg) -

Eluate Analysis

C₂Concⁿ in 2:1
eluateC₈Concⁿ in 8:1
eluateA₂2:1 concⁿ
leachedA₂₋₁₀Cumulative
concⁿ
leachedLimit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

PAH Spec MS - Aqueous (W)

	mg/l	mg/kg	
Pyrene by GCMS	0	0.000262	0.00013
Benz(a)anthracene by GCMS	<0.000017	0.00004	<0.000034
Benzo(b)fluoranthene by GCMS	<0.000023	0.000038	<0.000046
Benzo(k)fluoranthene by GCMS	<0.000027	0.0000556	<0.000054
Benzo(a)pyrene by GCMS	<0.000009	0.0000514	<0.000018
Dibenzo(ah)anthracene by GCMS	<0.000016	<0.000016	<0.000032
Benzo(ghi)perylene by GCMS	<0.000016	0.0000331	<0.000032
Indeno(123cd)pyrene by GCMS	<0.000014	0.000018	<0.000028
PAH 16 EPA Total by GCMS	0	0.00118	0.00206

	mg/l	mg/kg	
TPH CWG (W)			
Surrogate Recovery	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.006
Aliphatics C5-C6	<0.01	<0.01	<0.02
Aliphatics >C6-C8	<0.01	<0.01	<0.02
Aliphatics >C8-C10	<0.01	<0.01	<0.02
Aliphatics >C10-C12	<0.01	<0.01	<0.02
Aliphatics >C12-C16	<0.01	<0.01	<0.02
Aliphatics >C16-C21	<0.01	<0.01	<0.02
Aliphatics >C21-C35	<0.01	<0.01	<0.02
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02
Total Aliphatics & Aromatics >C12-C35	<0.01	<0.01	<0.02
Aromatics C6-C7	<0.01	<0.01	<0.02
Aromatics >C7-C8	<0.01	<0.01	<0.02

Leach Test Information

2:1

8:1

Date Prepared	10-Dec-2012	11-Dec-2012
pH (pH Units)	8.530	8.417
Conductivity (µS/cm)	11,120.00	2,090.00
Temperature (°C)	18.90	19.90
Volume Leachant (Litres)	0.250	1.400
Volume of Eluate VE1 (Litres)	0.192	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

20/12/2012 16:17:35

16:17:29 20/12/2012



CERTIFICATE OF ANALYSIS

SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg)	0.275
Mass of dry sample (kg)	0.175
Particle Size <4mm	>95%

Site Location

Medina

Moisture Content Ratio (%)

57.2

Dry Matter Content Ratio (%)

63.6

Case

SDG	121207-92
Lab Sample Number(s)	6623868
Sampled Date	03-Dec-2012
Customer Sample Ref.	BH102
Depth (m)	9.30 - 11.40

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Total Organic Carbon (%)	-
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	-
Sum of 7 PCBs (mg/kg)	-
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	-
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Inert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Eluate Analysis

Eluate Analysis	C2	Conc ⁿ in 2:1 eluate	C8	Conc ⁿ in 8:1 eluate	A2	2:1 conc ⁿ leached	A2-10	Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	mg/l				mg/kg				
TPH CWG (W)									
Benzene by GC		<0.007		<0.007		<0.014		<0.07	- - -
Toluene by GC		<0.004		<0.004		<0.008		<0.04	- - -
Ethylbenzene by GC		<0.005		<0.005		<0.01		<0.05	- - -
m & p Xylene by GC		<0.008		<0.008		<0.016		<0.08	- - -
o Xylene by GC		<0.003		<0.003		<0.006		<0.03	- - -
Sum m&p and o Xylene by GC		<0.011		<0.011		<0.022		<0.11	- - -
Sum of BTEX by GC		<0.028		<0.028		<0.056		<0.28	- - -
Aromatics >EC8 -EC10		<0.01		<0.01		<0.02		<0.1	- - -
Aromatics >EC10-EC12		<0.01		<0.01		<0.02		<0.1	- - -
Aromatics >EC12-EC16		<0.01		<0.01		<0.02		<0.1	- - -
Aromatics >EC16-EC21		<0.01		<0.01		<0.02		<0.1	- - -
Aromatics >EC21-EC35		<0.01		<0.01		<0.02		<0.1	- - -
Total Aromatics >EC12-EC35		<0.01		<0.01		<0.02		<0.1	- - -
Total Aliphatics >C5-C35 Aqueous		<0.01		<0.01		-		-	- - -
Total Aromatics >C6-C35 Aqueous		<0.01		<0.01		-		-	- - -
TPH (Total Aliphatics + Total Aromatics) >C5-C35		<0.01		<0.01		-		-	- - -
Total Aliphatics C5-C12		<0.01		<0.01		<0.02		<0.1	- - -
Total Aromatics C6-C12		<0.01		<0.01		<0.02		<0.1	- - -

Leach Test Information

	2:1	8:1
Date Prepared	10-Dec-2012	11-Dec-2012
pH (pH Units)	8.530	8.417
Conductivity (µS/cm)	11,120.00	2,090.00
Temperature (°C)	18.90	19.90
Volume Leachant (Litres)	0.250	1.400
Volume of Eluate VE1 (Litres)	0.192	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

20/12/2012 16:17:35

16:17:29 20/12/2012



SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM023	Leaching test method for the Assessment of Contaminated Land: Interim NRA Guidance. National Rivers Authority R & D note 301. (1994).	Leaching Procedure for NRA Leachates		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
PM114		Leaching Procedure for CEN Two Stage BatchTest 2:1/8:1 Cumulative		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM243		Mixed Anions In Soils By Kone		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		
TM321		Organic matter Content of Soil By Titration		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



CERTIFICATE OF ANALYSIS

SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Test Completion Dates

Lab Sample No(s)	6623859	6623860	6623862	6623863	6623865	6623866	6623868
Customer Sample Ref.	BH101	BH101	BH101	BH102	BH102	BH102	BH102
AGS Ref.							
Depth	0.00 - 1.00	1.00 - 6.00	6.00 - 8.00	0.00 - 1.00	1.00 - 6.60	6.60 - 9.30	9.30 - 11.40
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Alkalinity Filtered as CaCO3		17-Dec-2012	17-Dec-2012		14-Dec-2012	14-Dec-2012	14-Dec-2012
Ammoniacal Nitrogen		17-Dec-2012	17-Dec-2012		17-Dec-2012	17-Dec-2012	17-Dec-2012
Ammonium Soil by Titration	18-Dec-2012			18-Dec-2012			
Anions by Kone (soil)	18-Dec-2012			18-Dec-2012			
Anions by Kone (w)		15-Dec-2012	15-Dec-2012		15-Dec-2012	17-Dec-2012	15-Dec-2012
Asbestos Identification (Soil)	20-Dec-2012			20-Dec-2012			
Boron Water Soluble	18-Dec-2012			18-Dec-2012			
CEN 2:1 Leachate (2 Stage)		10-Dec-2012	10-Dec-2012		10-Dec-2012		10-Dec-2012
CEN 2:1 Readings		12-Dec-2012	12-Dec-2012		12-Dec-2012		12-Dec-2012
CEN 8:1 Leachate (2 Stage)		12-Dec-2012	12-Dec-2012		12-Dec-2012		12-Dec-2012
CEN 8:1 Readings		13-Dec-2012	14-Dec-2012		14-Dec-2012		14-Dec-2012
Cyanide Comp/Free/Total/Thiocyanate	18-Dec-2012	17-Dec-2012	17-Dec-2012	18-Dec-2012	17-Dec-2012	17-Dec-2012	17-Dec-2012
Dissolved Metals by ICP-MS		14-Dec-2012	14-Dec-2012		14-Dec-2012	17-Dec-2012	14-Dec-2012
EPH CWG (Aliphatic) Aqueous GC (W)		16-Dec-2012	16-Dec-2012		16-Dec-2012	17-Dec-2012	16-Dec-2012
EPH CWG (Aliphatic) GC (S)	19-Dec-2012			19-Dec-2012			
EPH CWG (Aromatic) Aqueous GC (W)		16-Dec-2012	16-Dec-2012		16-Dec-2012	17-Dec-2012	16-Dec-2012
EPH CWG (Aromatic) GC (S)	19-Dec-2012			19-Dec-2012			
GRO by GC-FID (S)	17-Dec-2012			17-Dec-2012			
GRO by GC-FID (W)		18-Dec-2012	14-Dec-2012		18-Dec-2012	17-Dec-2012	18-Dec-2012
Low Level Phenols by HPLC (W)		18-Dec-2012	18-Dec-2012		18-Dec-2012	19-Dec-2012	18-Dec-2012
Mercury Unfiltered		17-Dec-2012	17-Dec-2012		17-Dec-2012	18-Dec-2012	17-Dec-2012
Metals by iCap-OES (Soil)	19-Dec-2012			19-Dec-2012			
Nitrite by Kone (w)		17-Dec-2012	17-Dec-2012		17-Dec-2012	17-Dec-2012	17-Dec-2012
NRA Leachate						13-Dec-2012	
PAH by GCMS	17-Dec-2012			17-Dec-2012			
PAH Spec MS - Aqueous (W)		17-Dec-2012	17-Dec-2012		17-Dec-2012	17-Dec-2012	17-Dec-2012
pH	14-Dec-2012			17-Dec-2012			
pH Value		14-Dec-2012	14-Dec-2012		14-Dec-2012	14-Dec-2012	14-Dec-2012
Phenols by HPLC (S)	18-Dec-2012			18-Dec-2012			
Sample description	14-Dec-2012	12-Dec-2012	12-Dec-2012	14-Dec-2012	12-Dec-2012	12-Dec-2012	12-Dec-2012
Total Organic Carbon	20-Dec-2012			20-Dec-2012			
TPH CWG (W)		11-Dec-2012	11-Dec-2012		11-Dec-2012	17-Dec-2012	11-Dec-2012
TPH CWG GC (S)	19-Dec-2012			19-Dec-2012			



SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

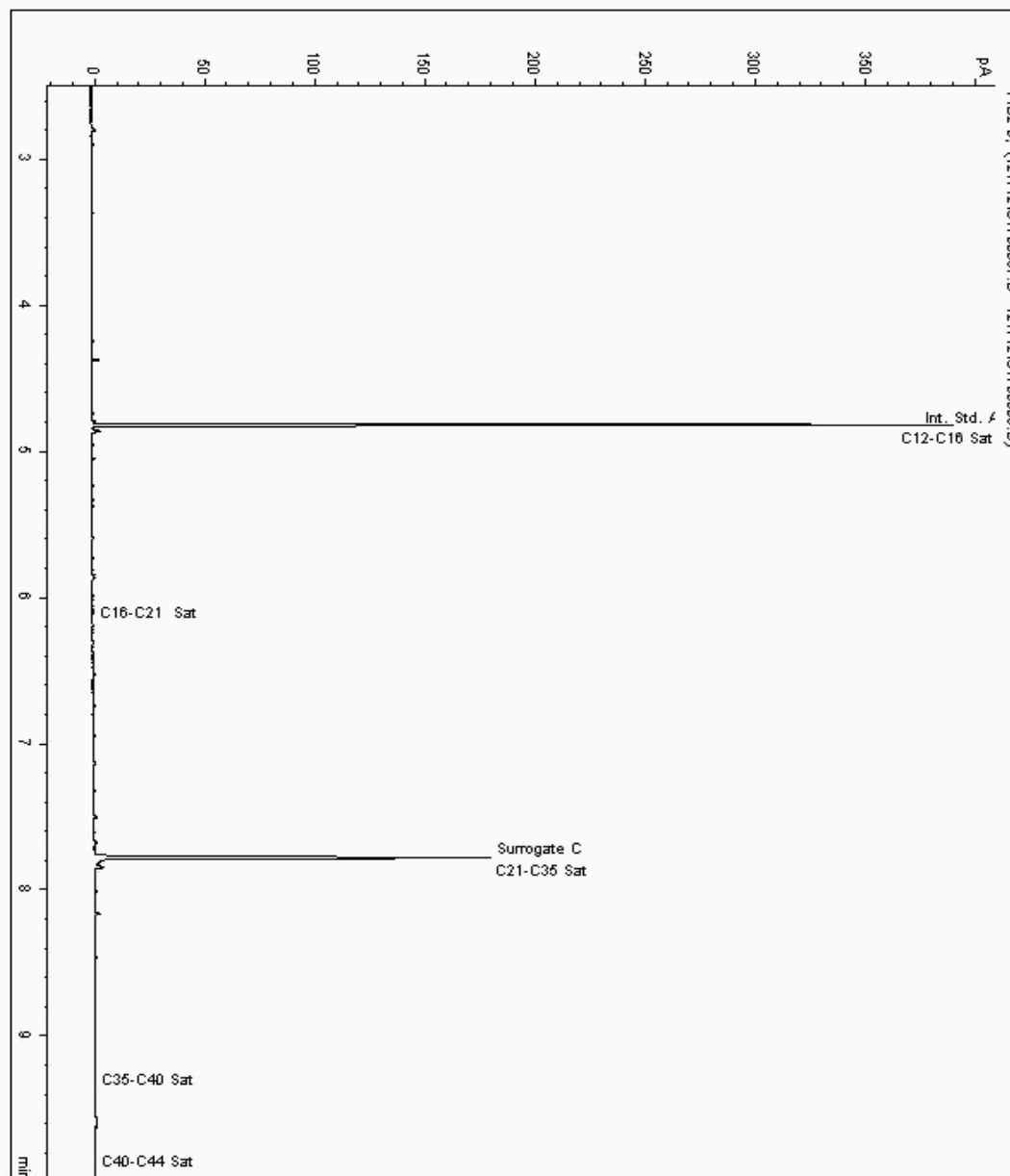
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 6680489
Sample ID : BH102

Depth : 0.00 - 1.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6399254-6680489
Date Acquired : 19/12/2012 08:09:46 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.040





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

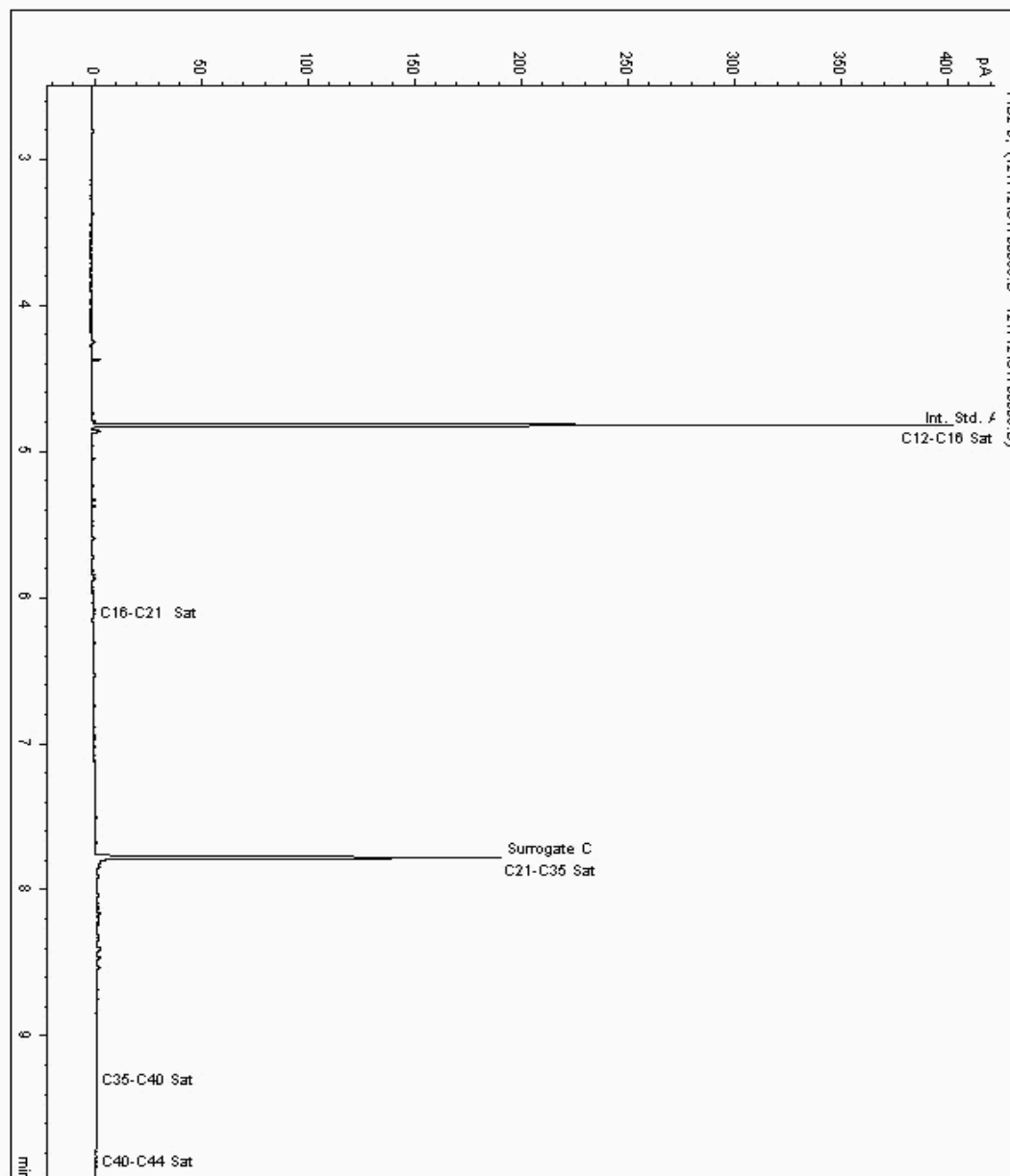
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 6680510
Sample ID : BH101

Depth : 0.00 - 1.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6399207-6680510
Date Acquired : 19/12/2012 08:40:01 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.970





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

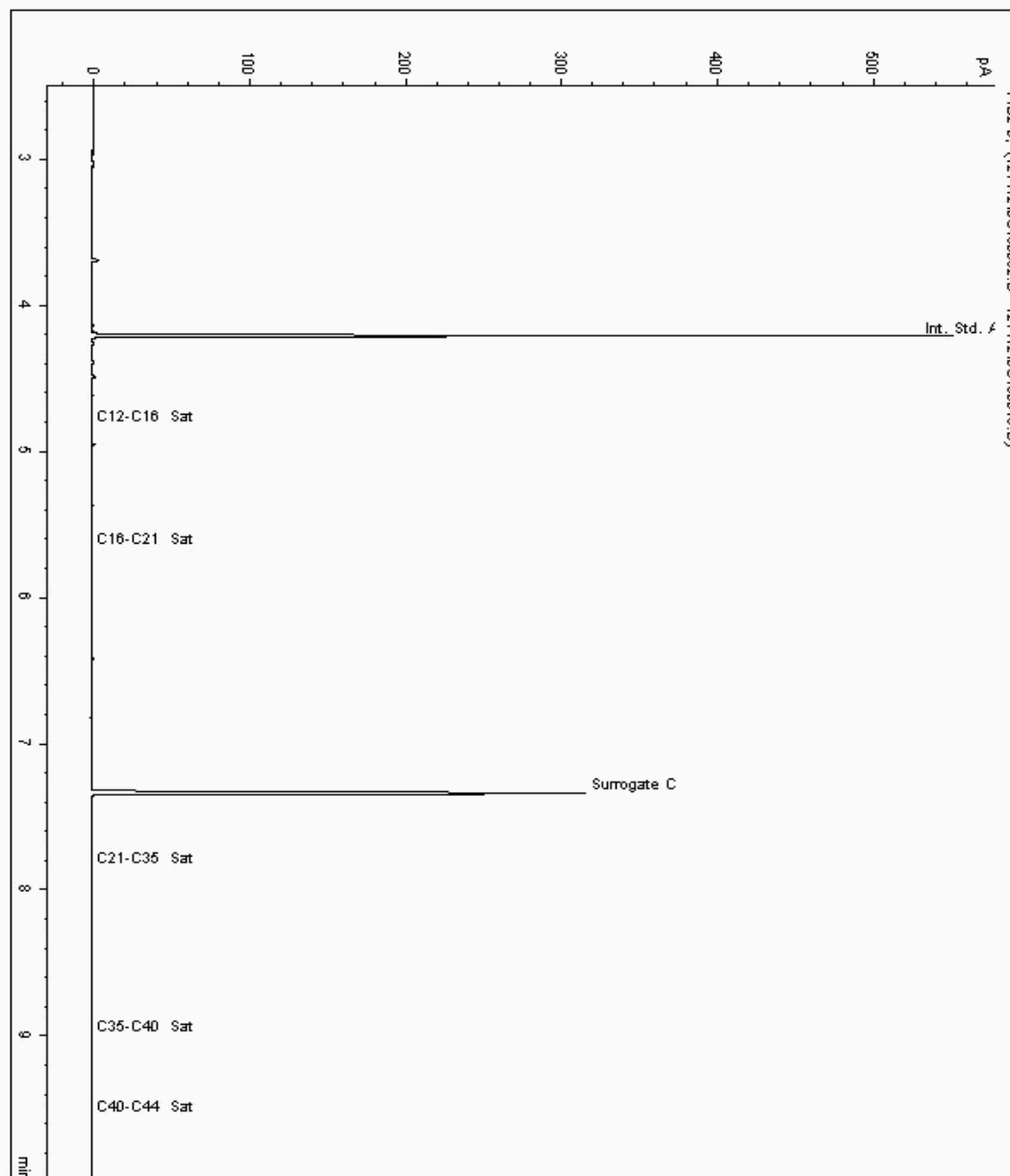
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6653429
Sample ID : BH101

Depth : 6.00 - 8.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6399343-6653429
Date Acquired : 15/12/2012 16:00:26 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.010





CERTIFICATE OF ANALYSIS

SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

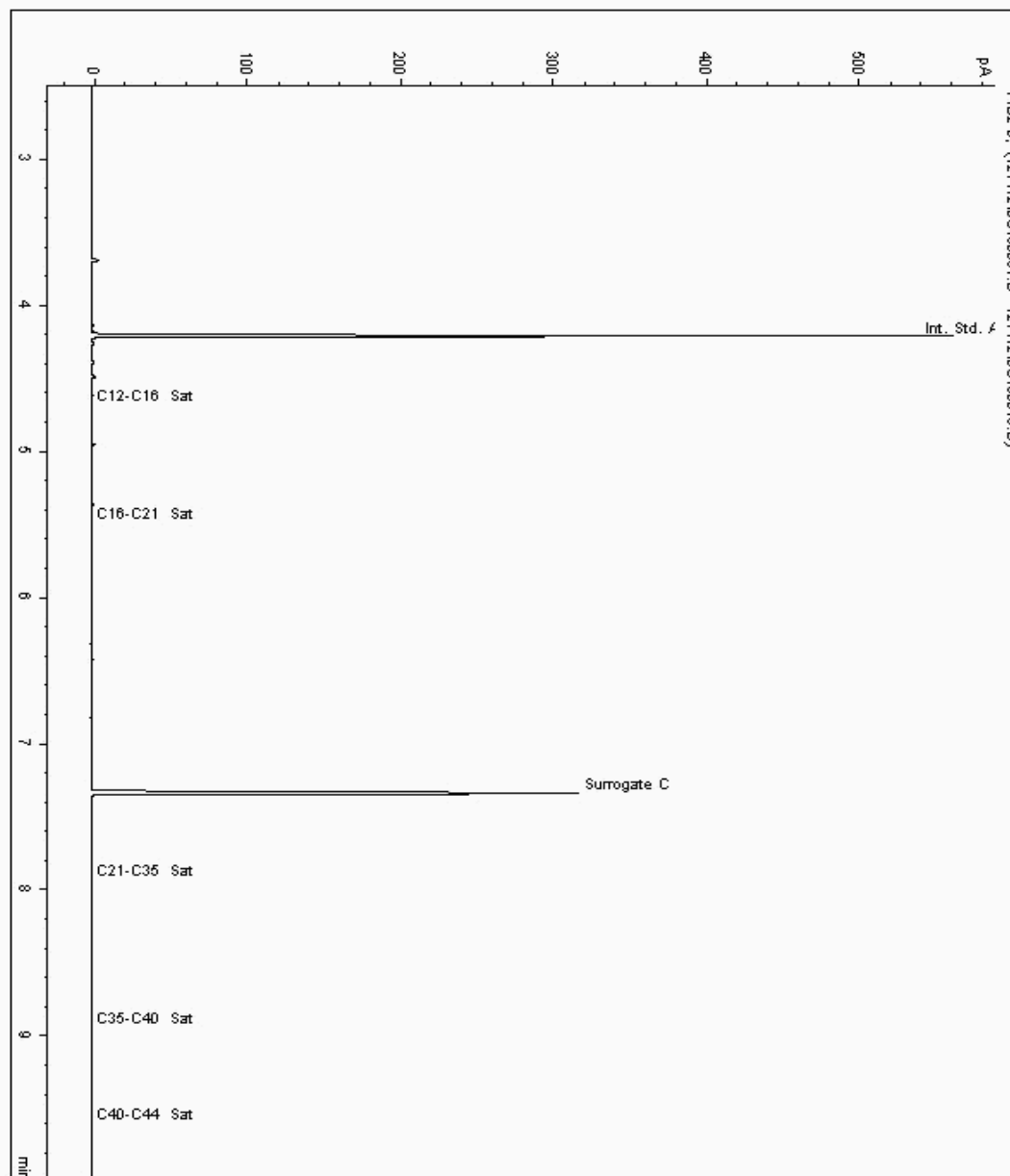
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6653452
Sample ID : BH101

Depth : 1.00 - 6.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6399314-6653452
Date Acquired : 15/12/2012 15:41:39 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

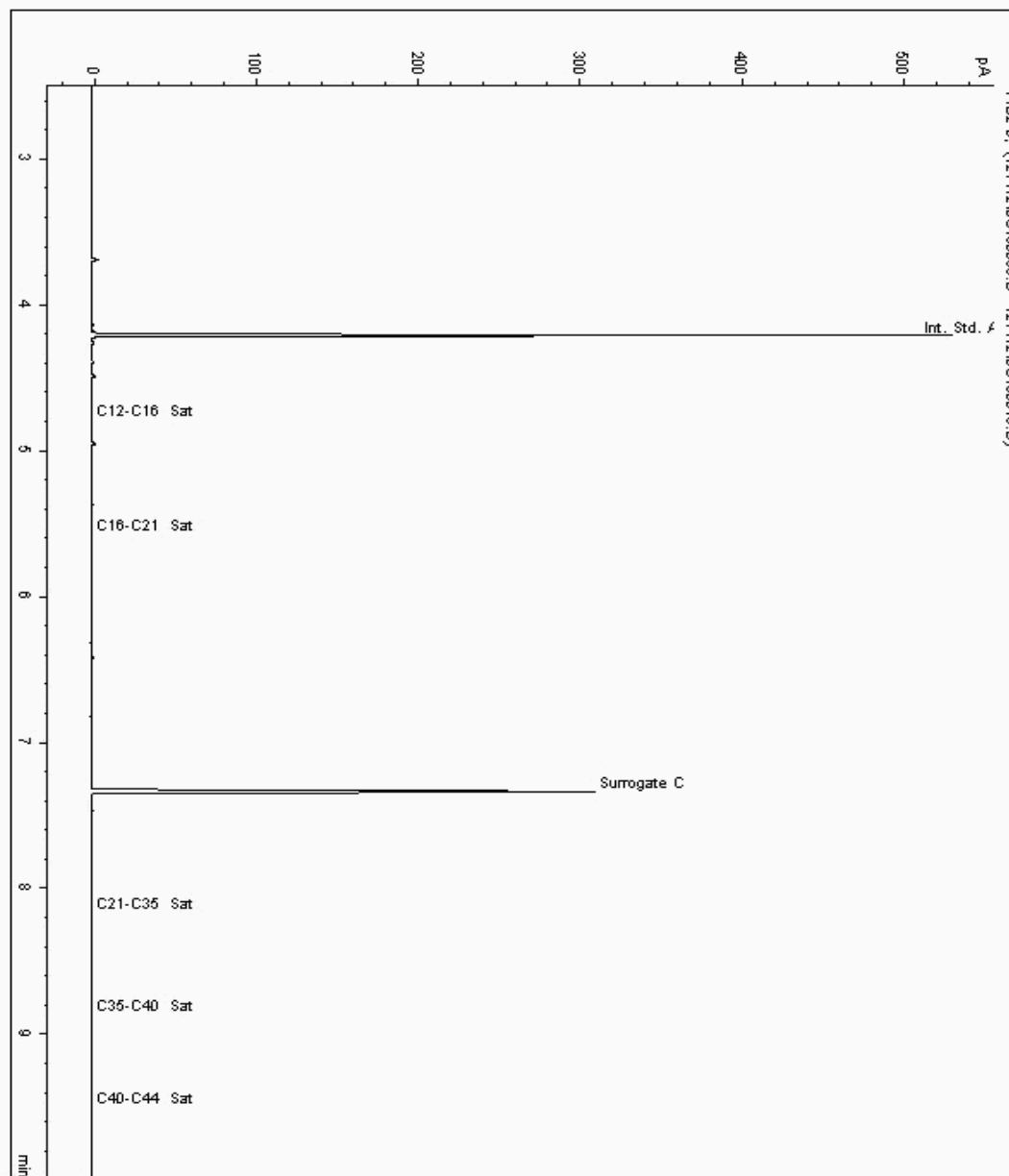
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6653454
Sample ID : BH102

Depth : 9.30 - 11.40

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6399439-6653454
Date Acquired : 15/12/2012 16:19:16 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.012





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

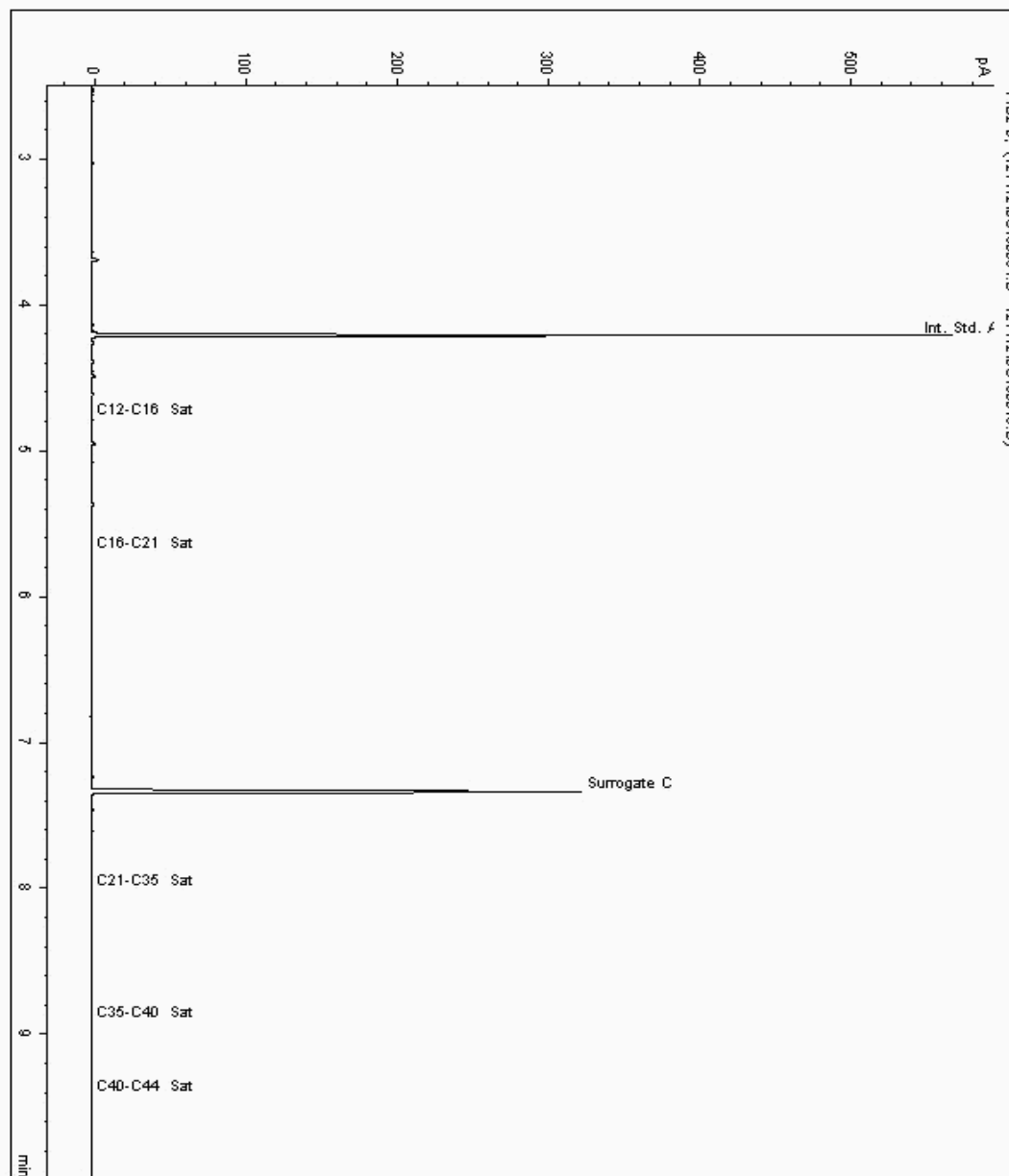
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6653505
Sample ID : BH102

Depth : 1.00 - 6.60

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6399385-6653505
Date Acquired : 15/12/2012 16:38:05 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.009





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

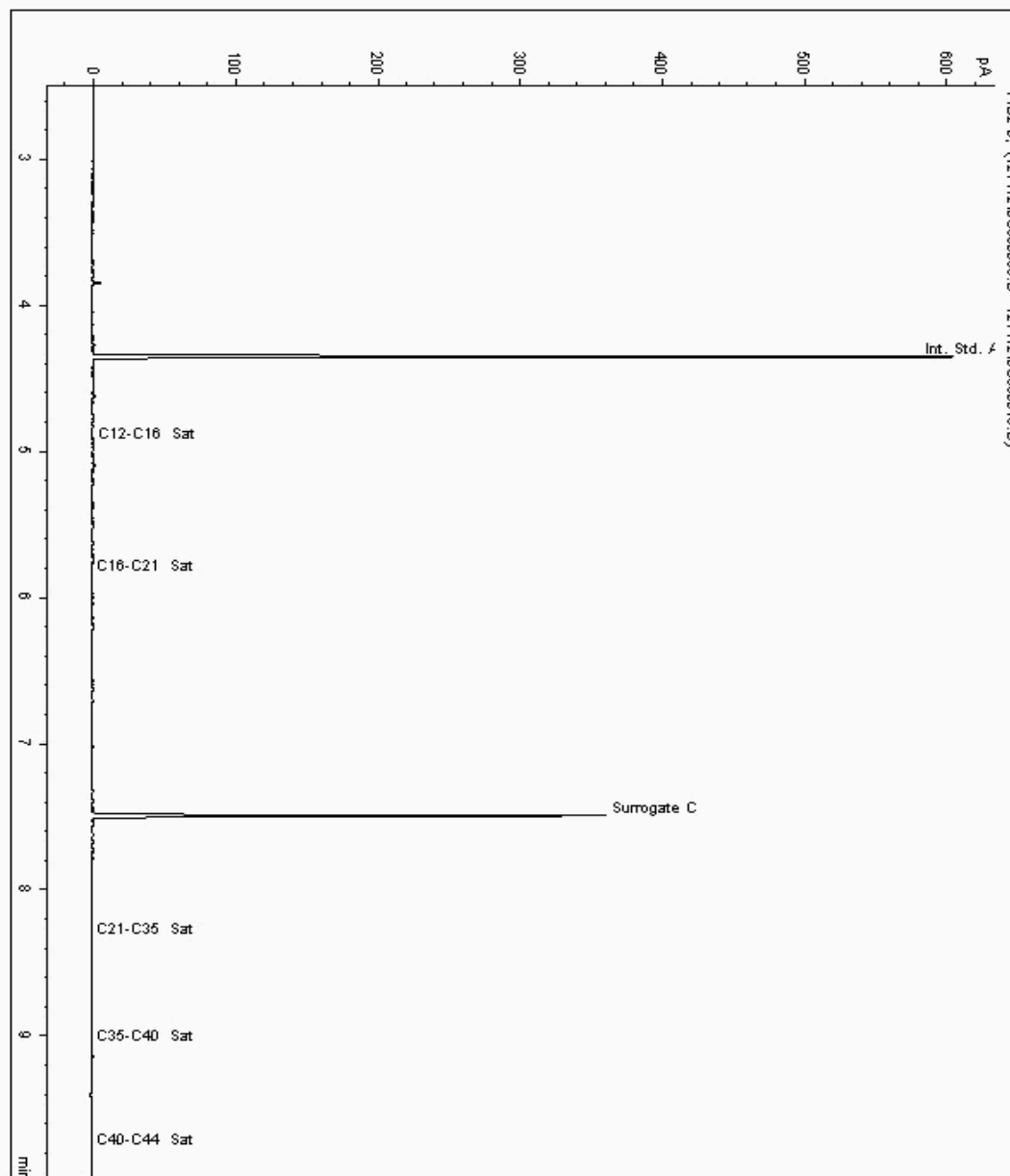
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6663059
Sample ID : BH102

Depth : 9.30 - 11.40

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6413846-6663059
Date Acquired : 15/12/12 15:26:14 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

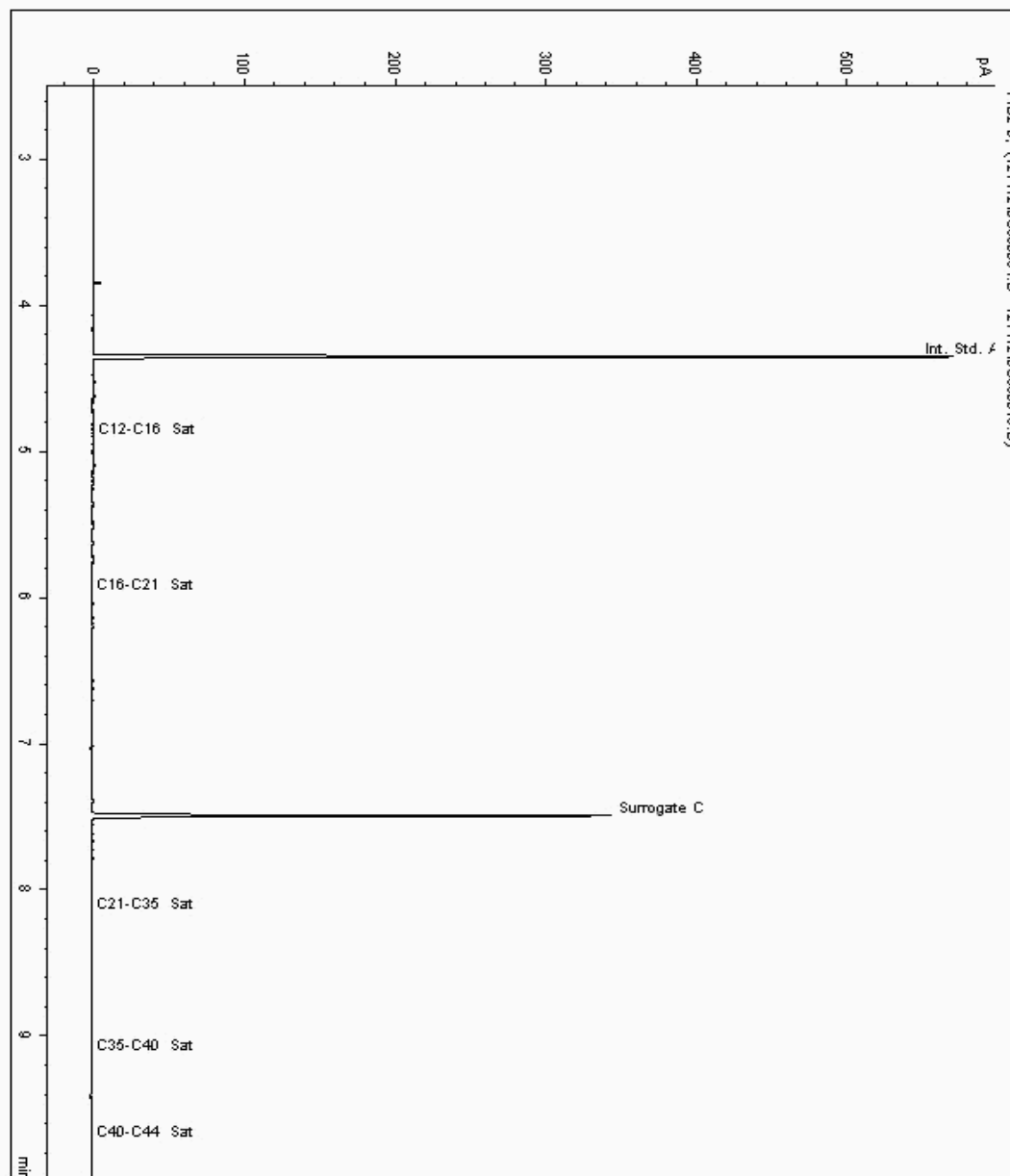
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6663153
Sample ID : BH101

Depth : 6.00 - 8.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6413792-6663153
Date Acquired : 15/12/12 15:44:57 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

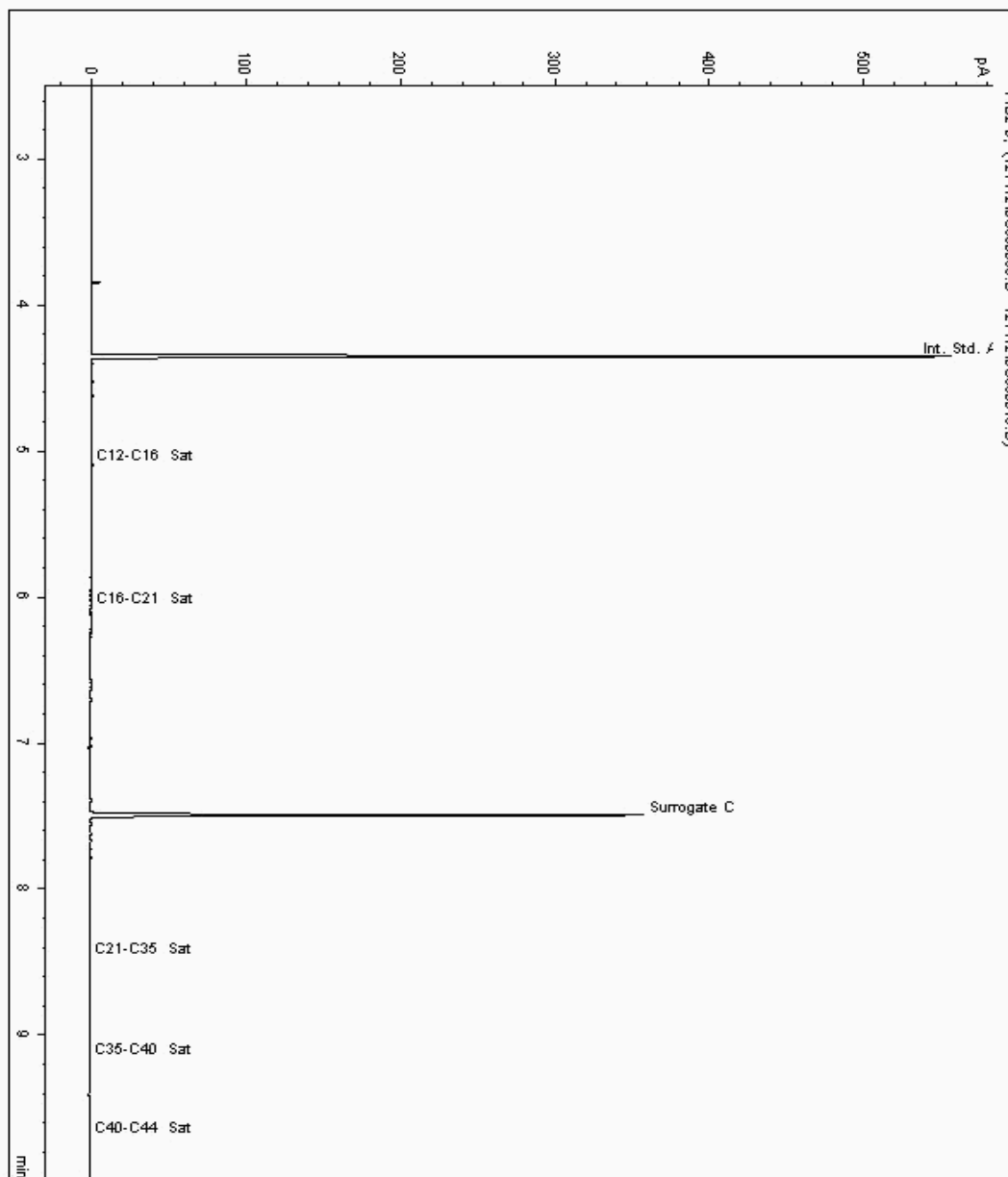
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6663168
Sample ID : BH102

Depth : 1.00 - 6.60

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6413819-6663168
Date Acquired : 15/12/12 16:03:24 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

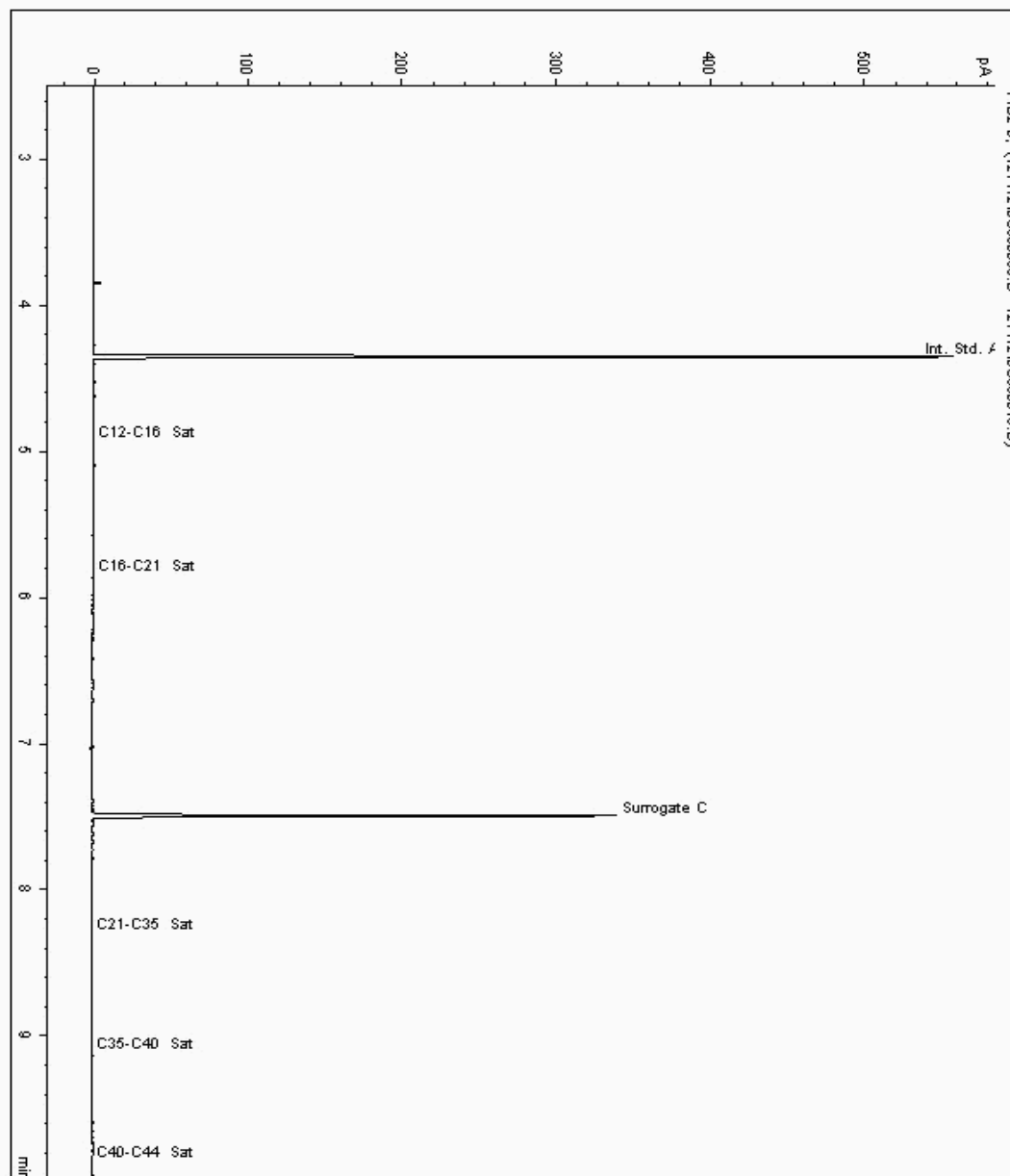
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6663248
Sample ID : BH101

Depth : 1.00 - 6.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6413765-6663248
Date Acquired : 15/12/12 16:21:56 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

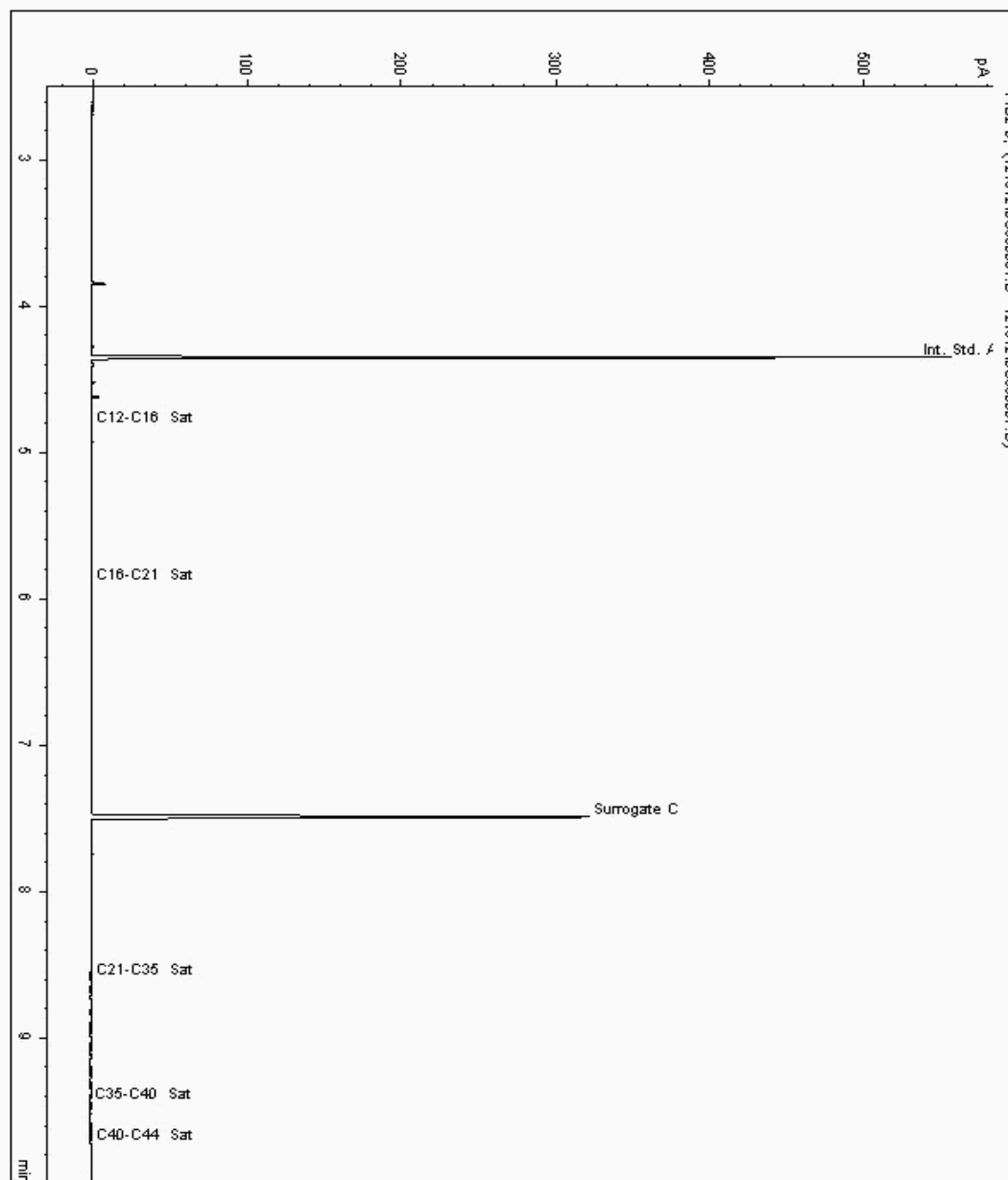
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6675045
Sample ID : BH102

Depth : 6.60 - 9.30

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6424527-6675045
Date Acquired : 17/12/12 13:41:20 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

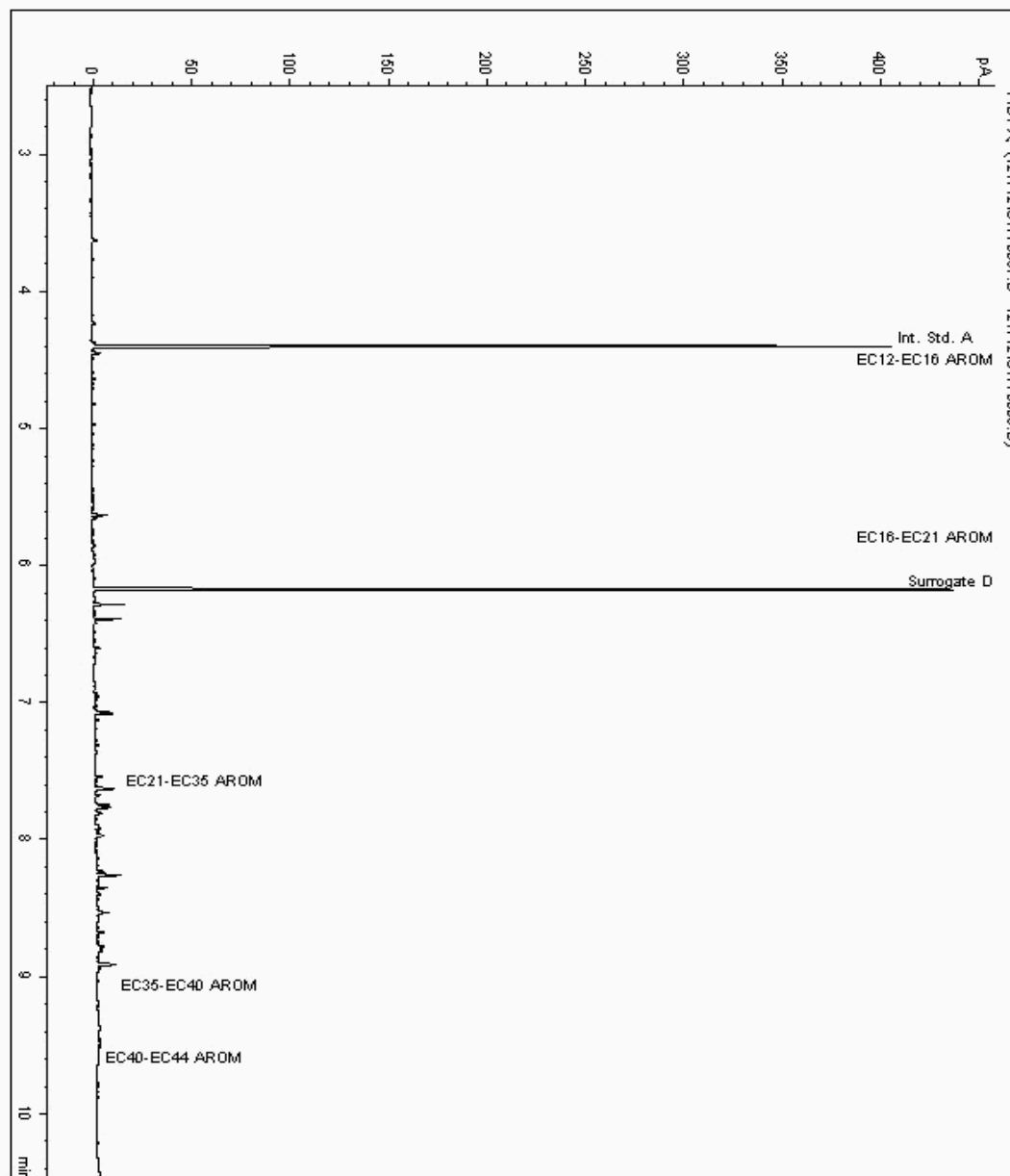
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 6680489
Sample ID : BH102

Depth : 0.00 - 1.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6399255-6680489
Date Acquired : 19/12/2012 08:09:46 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.000





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

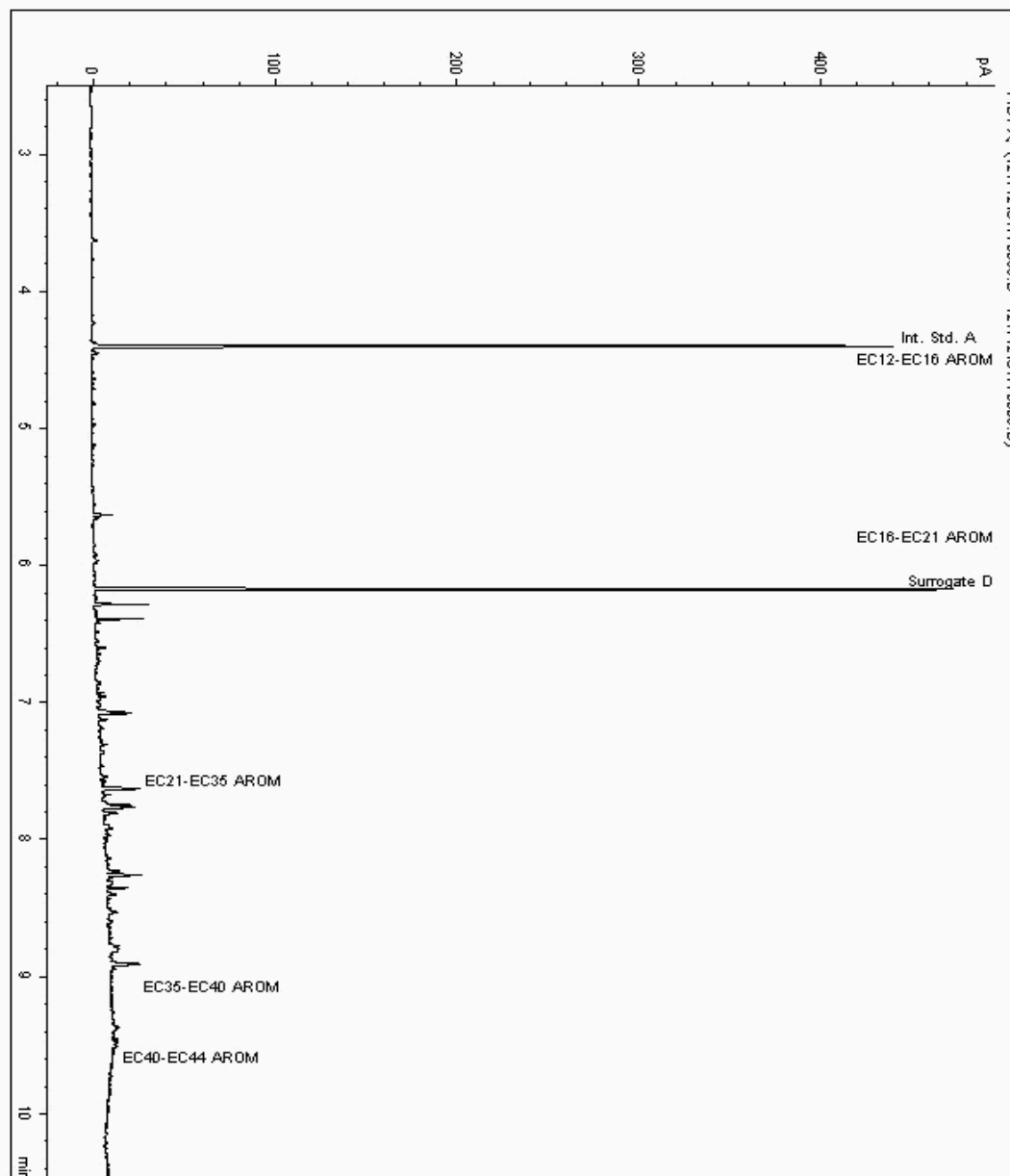
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 6680510
Sample ID : BH101

Depth : 0.00 - 1.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6399208-6680510
Date Acquired : 19/12/2012 08:40:01 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.000





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

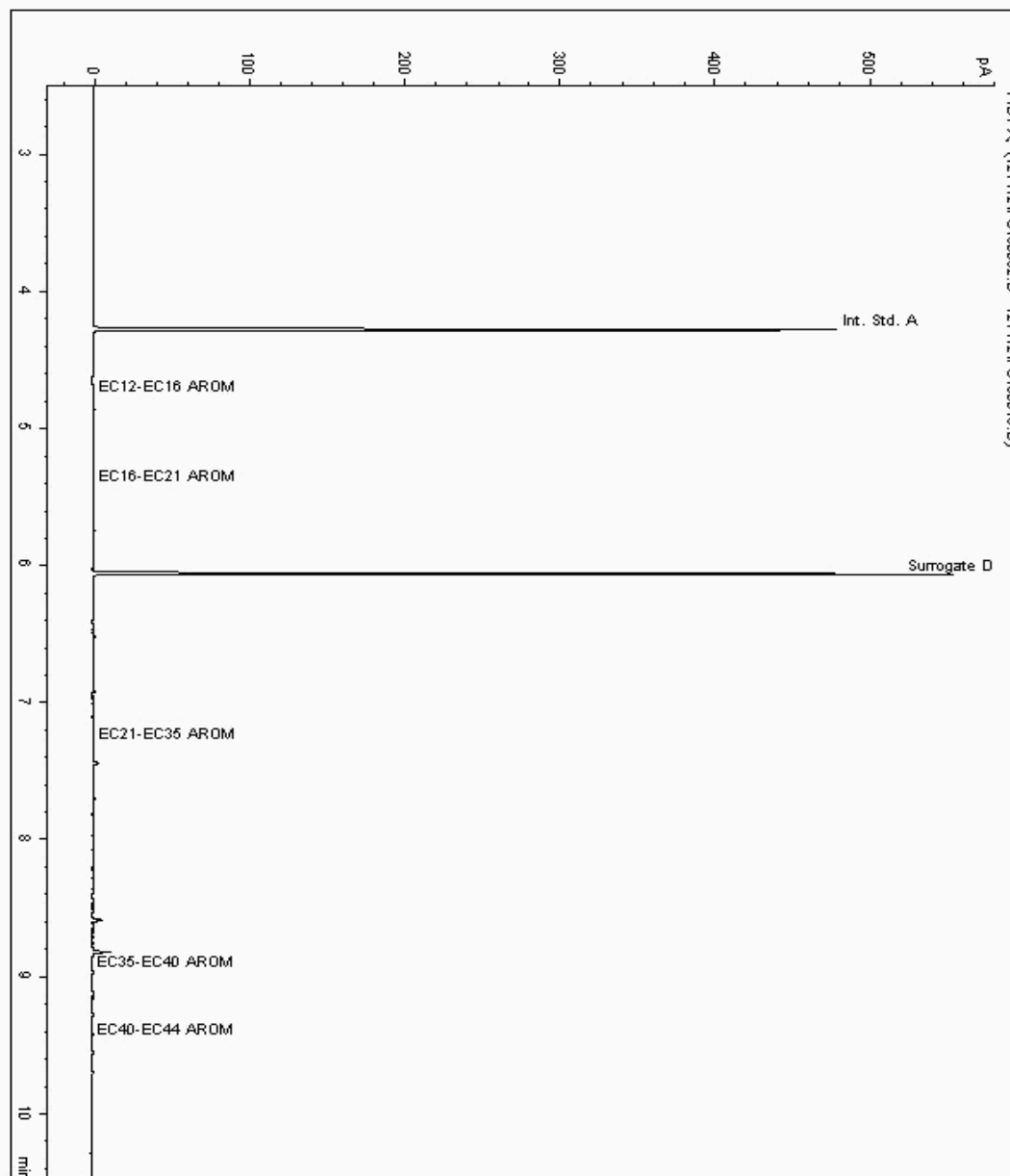
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6653429
Sample ID : BH101

Depth : 6.00 - 8.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6399344-6653429
Date Acquired : 15/12/2012 16:00:26 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.010





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

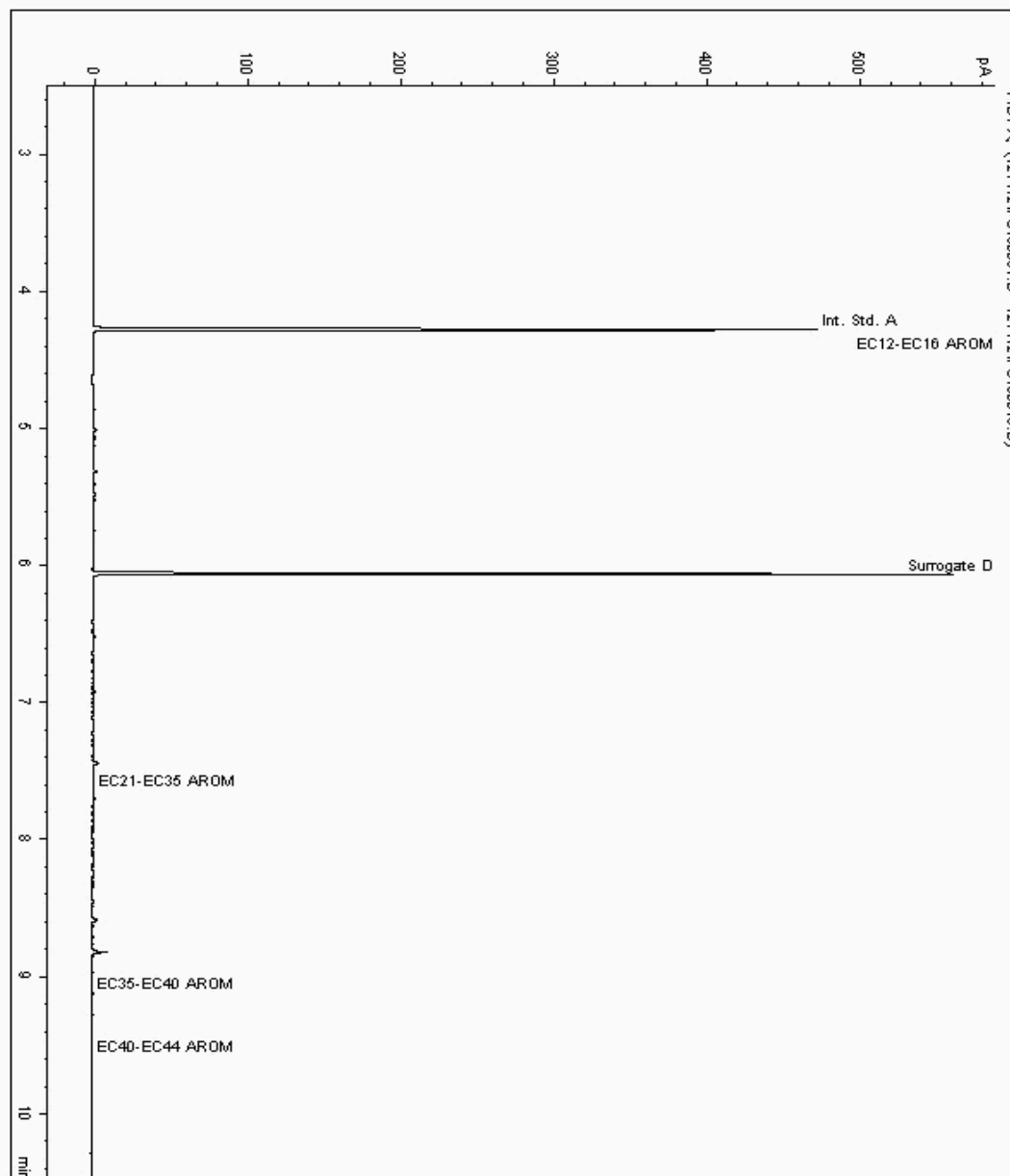
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6653452
Sample ID : BH101

Depth : 1.00 - 6.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6399315-6653452
Date Acquired : 15/12/2012 15:41:39 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

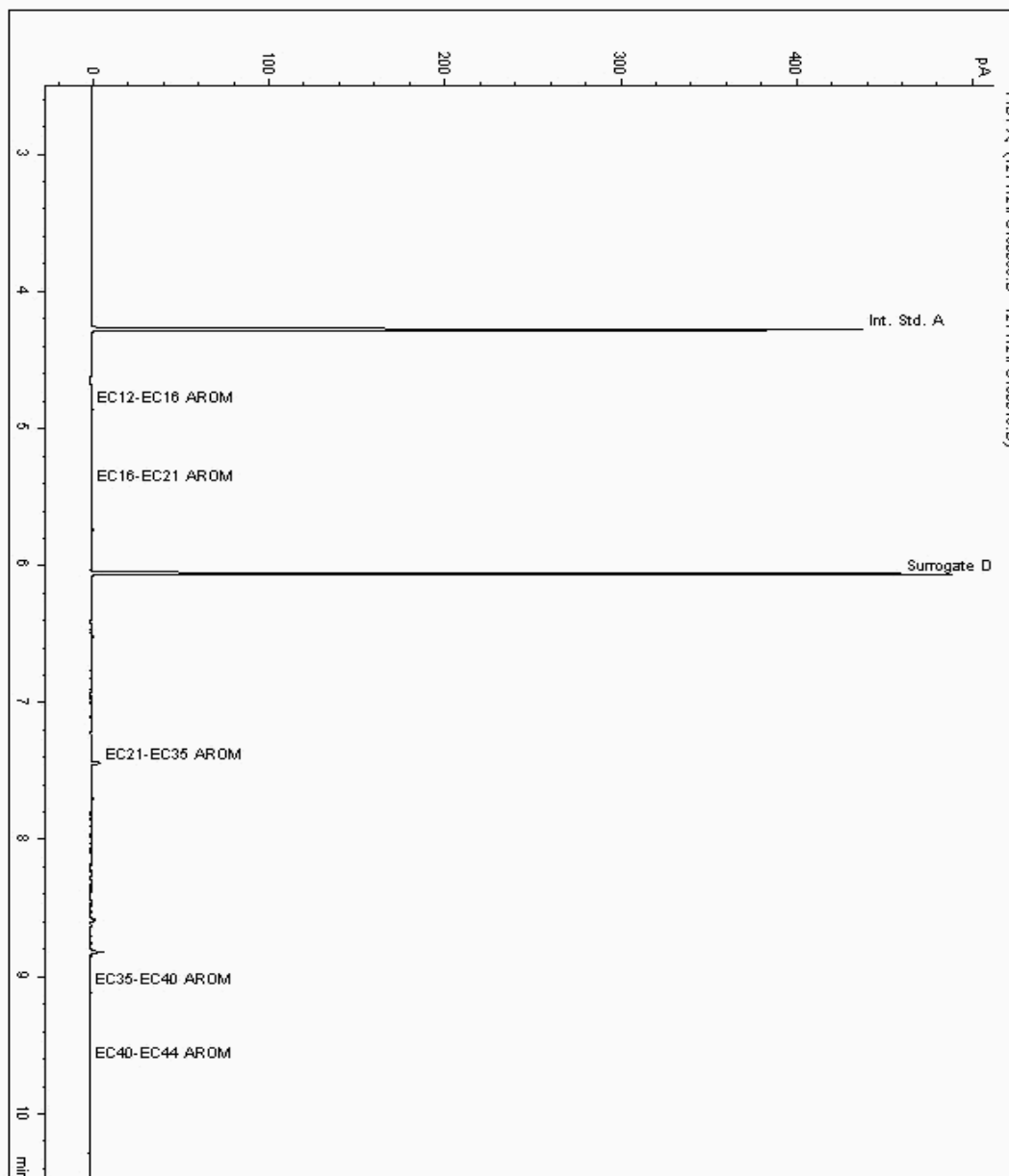
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6653454
Sample ID : BH102

Depth : 9.30 - 11.40

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6399440-6653454
Date Acquired : 15/12/2012 16:19:16 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.012





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

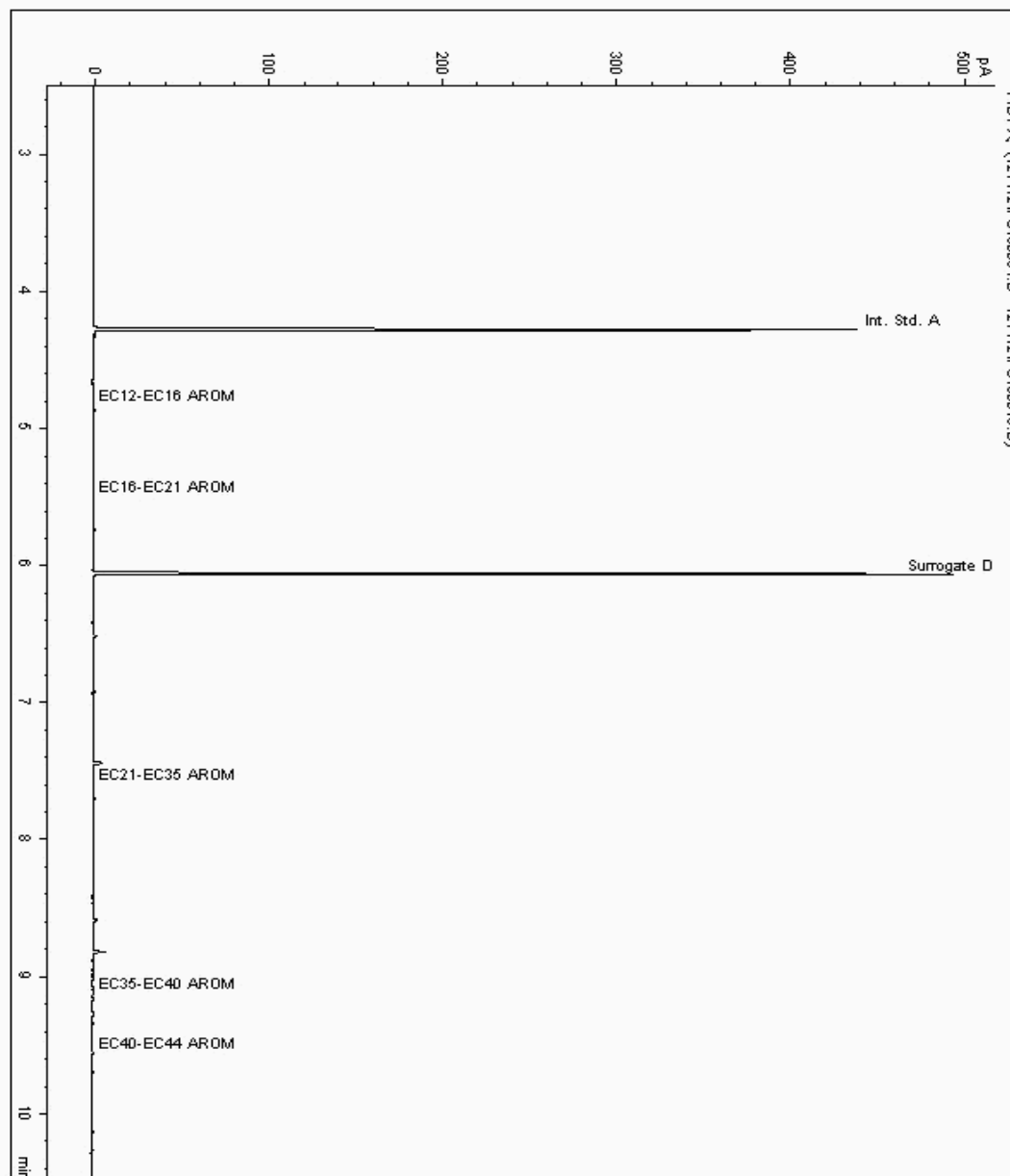
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6653505
Sample ID : BH102

Depth : 1.00 - 6.60

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6399386-6653505
Date Acquired : 15/12/2012 16:38:05 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.009





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

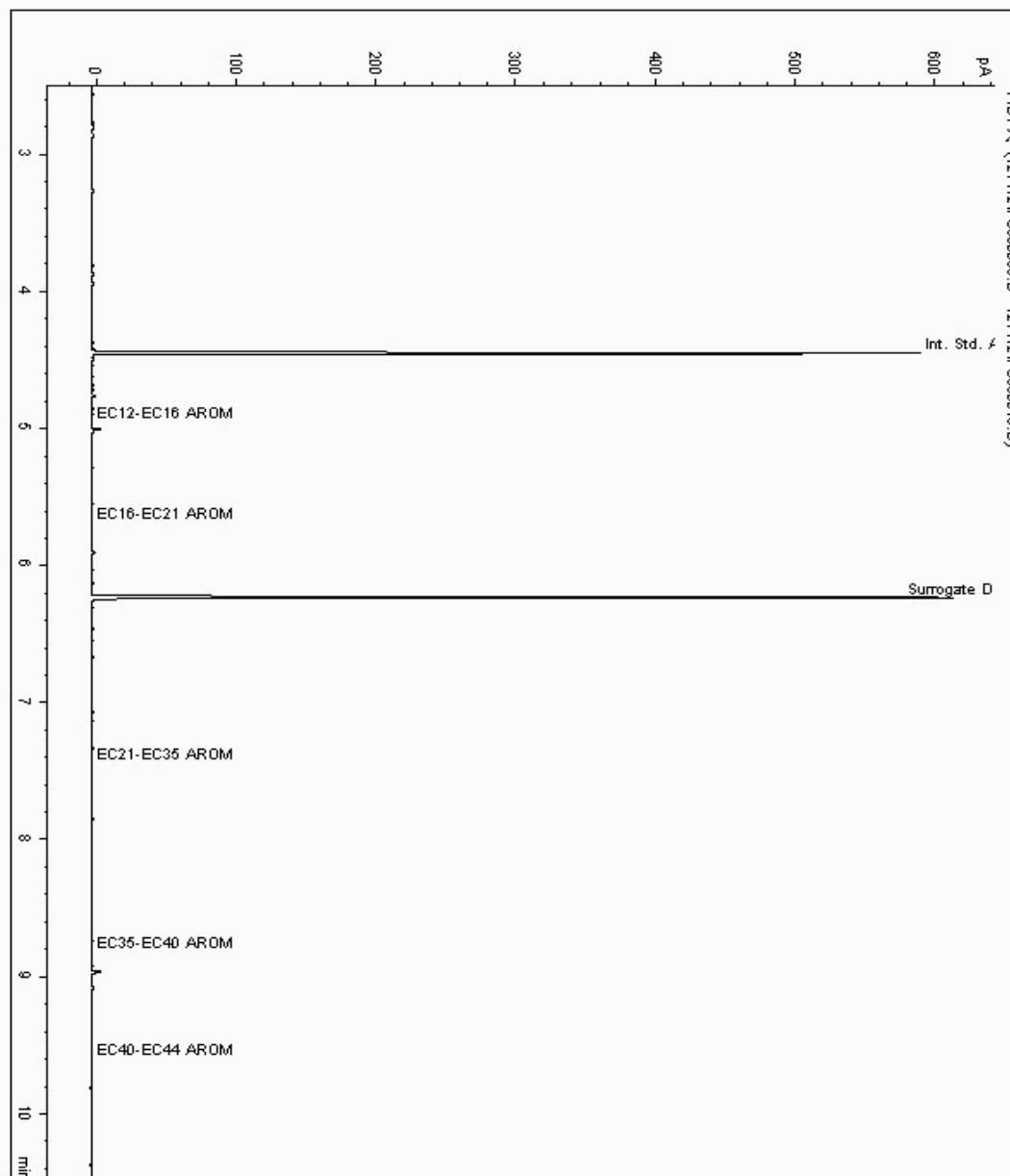
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6663059
Sample ID : BH102

Depth : 9.30 - 11.40

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6413847-6663059
Date Acquired : 15/12/12 15:26:14 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

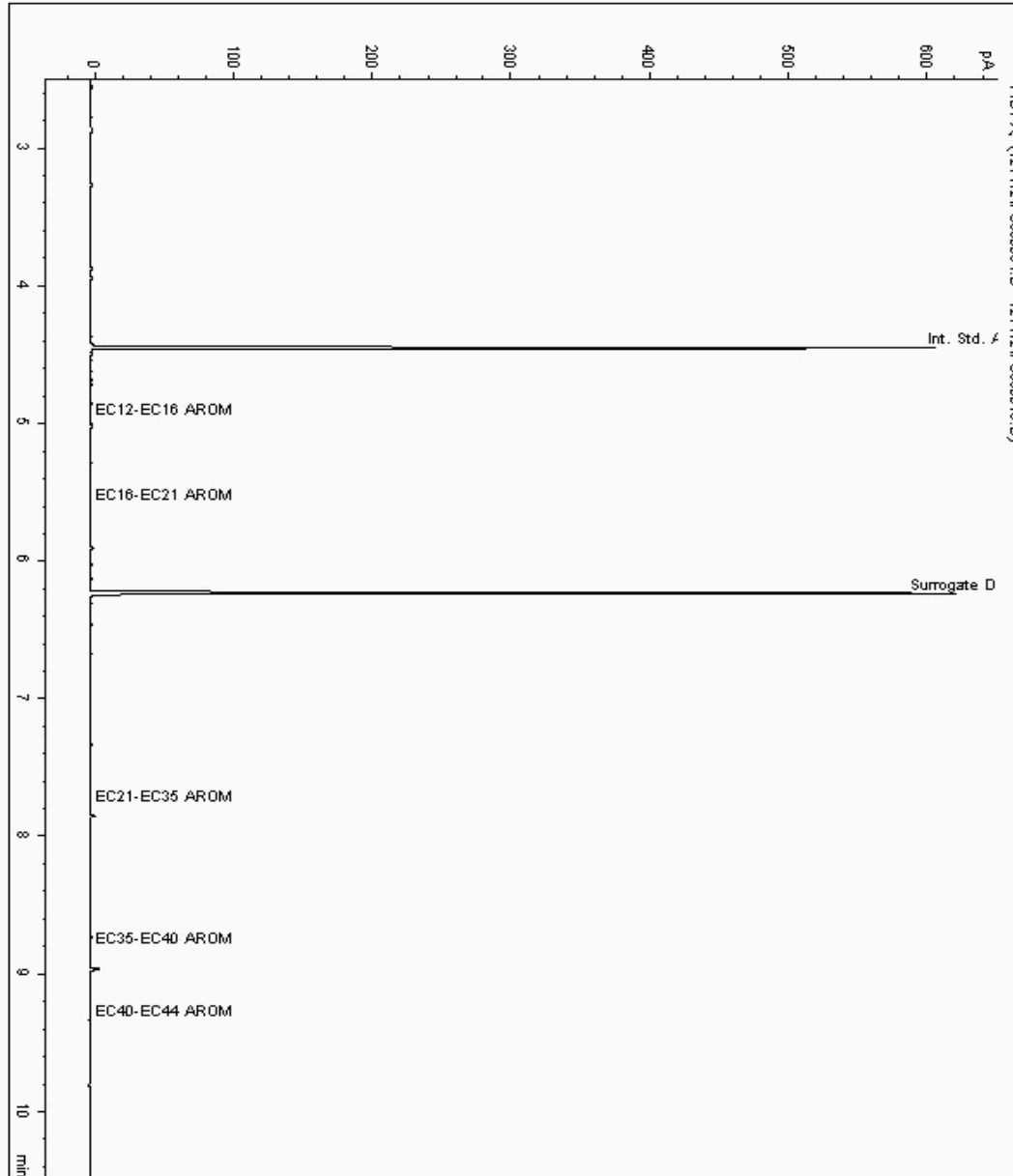
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6663153
Sample ID : BH101

Depth : 6.00 - 8.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6413793-6663153
Date Acquired : 15/12/12 15:44:57 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

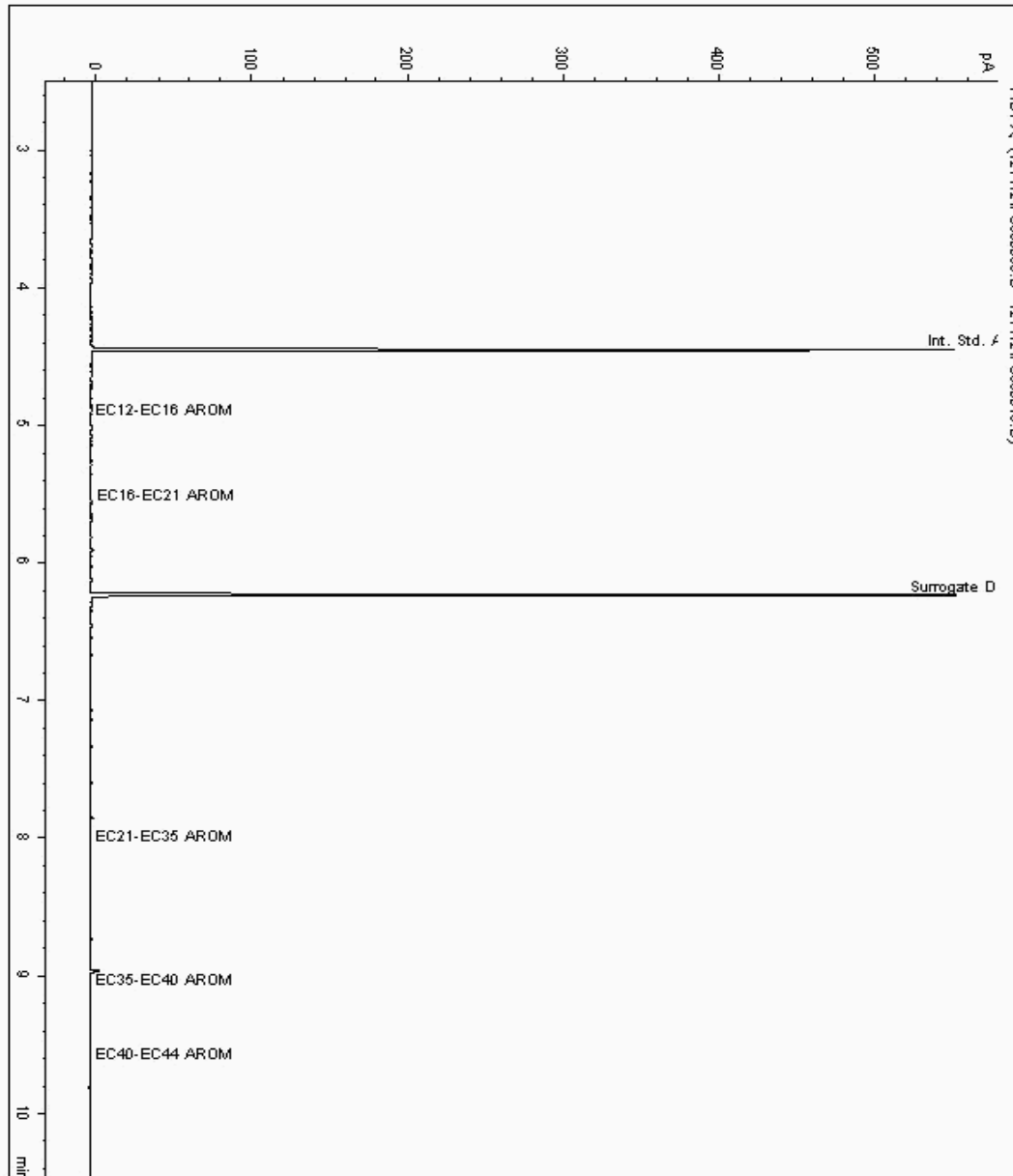
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6663168
Sample ID : BH102

Depth : 1.00 - 6.60

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6413820-6663168
Date Acquired : 15/12/12 16:03:24 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

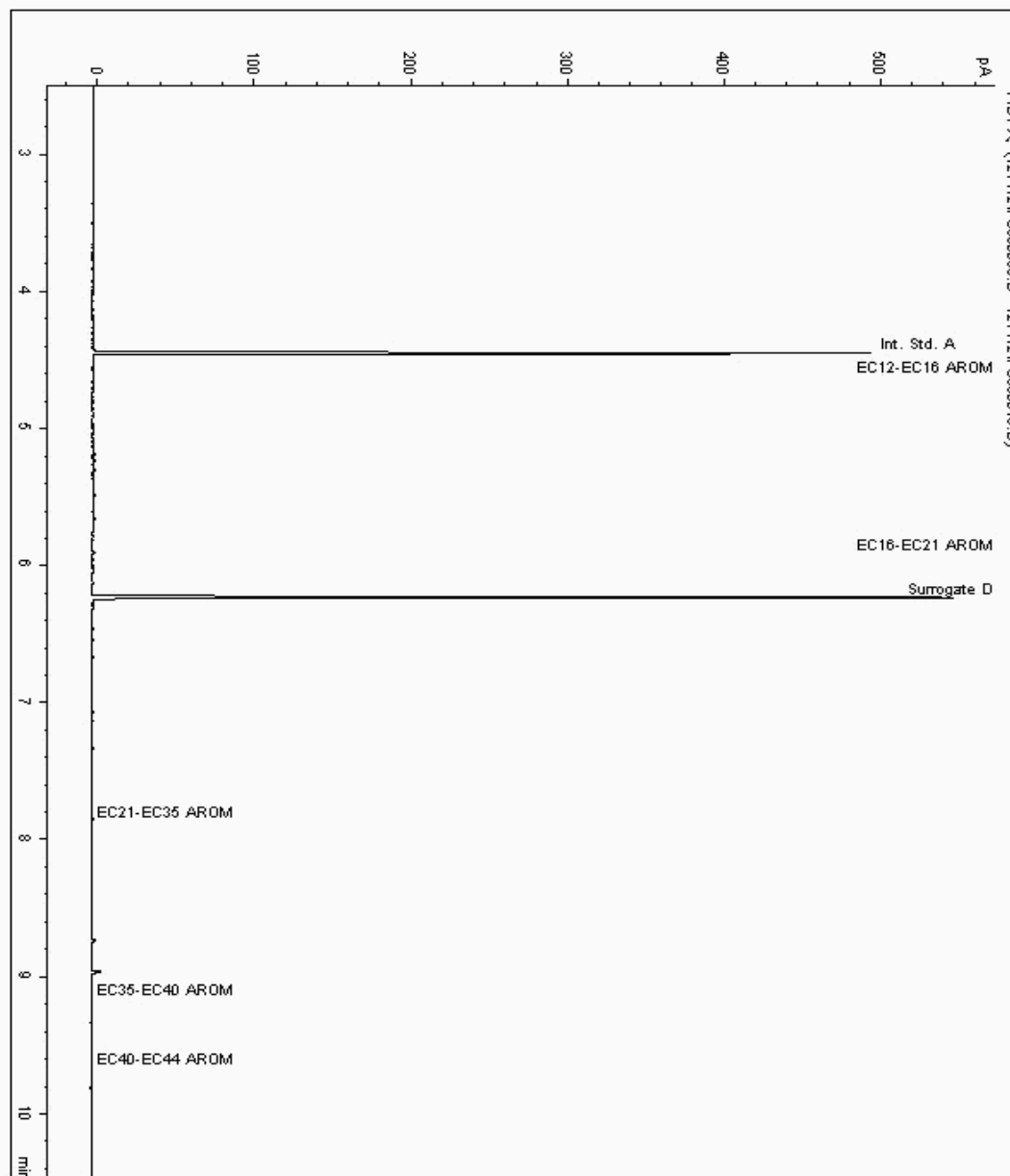
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6663248
Sample ID : BH101

Depth : 1.00 - 6.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6413766-6663248
Date Acquired : 15/12/12 16:21:56 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

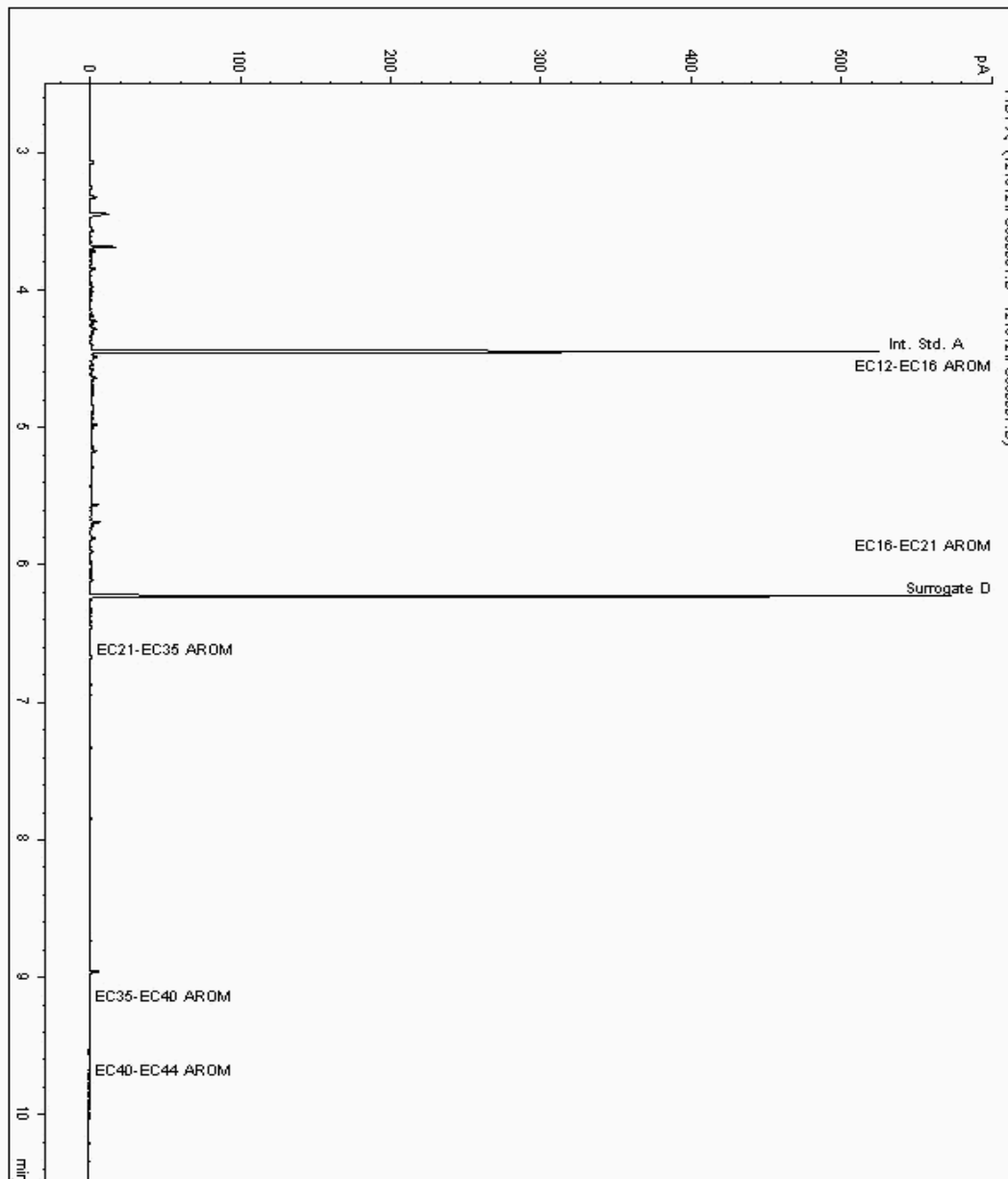
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6675045
Sample ID : BH102

Depth : 6.60 - 9.30

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6424528-6675045
Date Acquired : 17/12/12 13:41:20 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

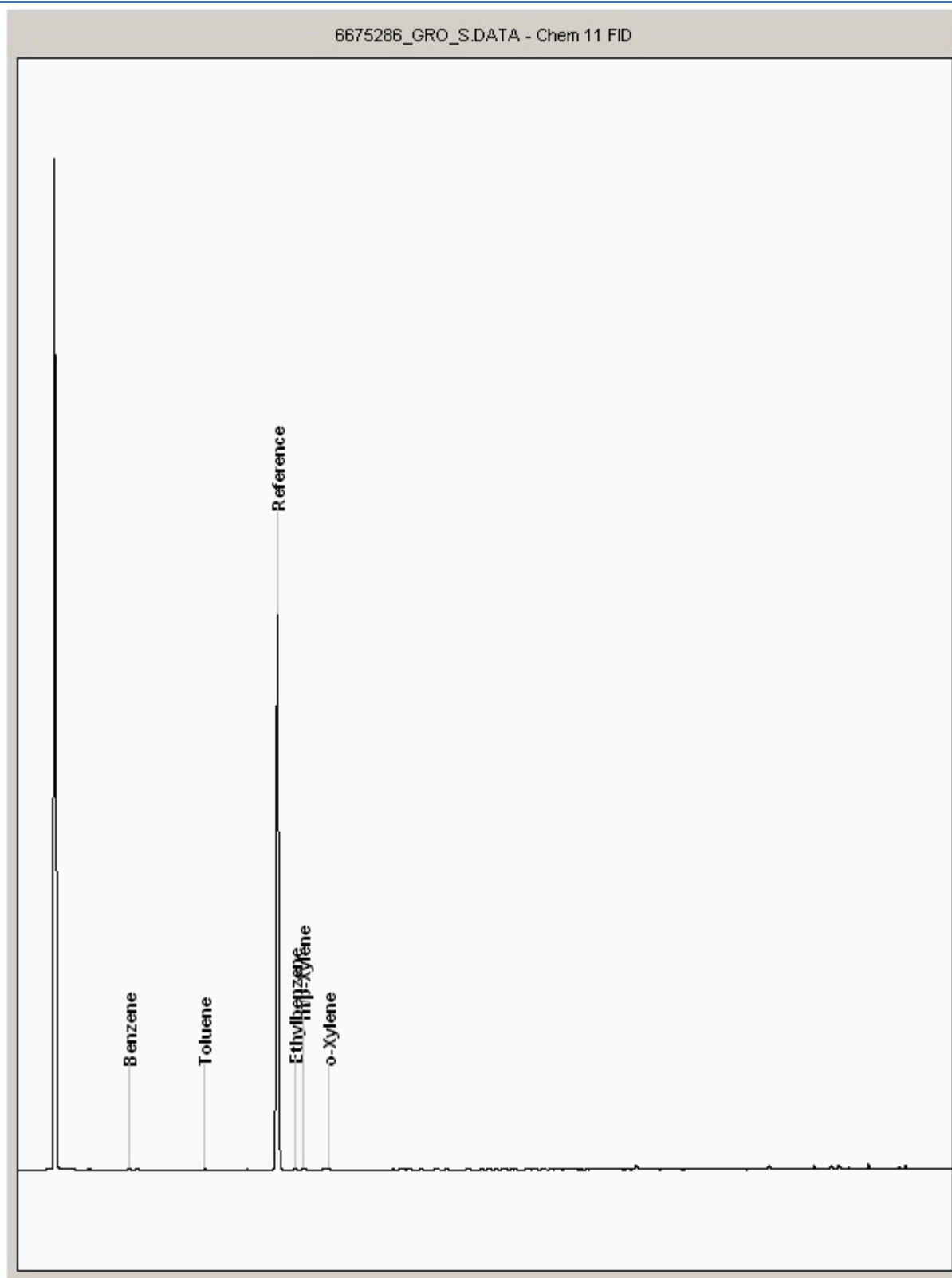
Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 6675286
Sample ID : BH101

Depth : 0.00 - 1.00





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

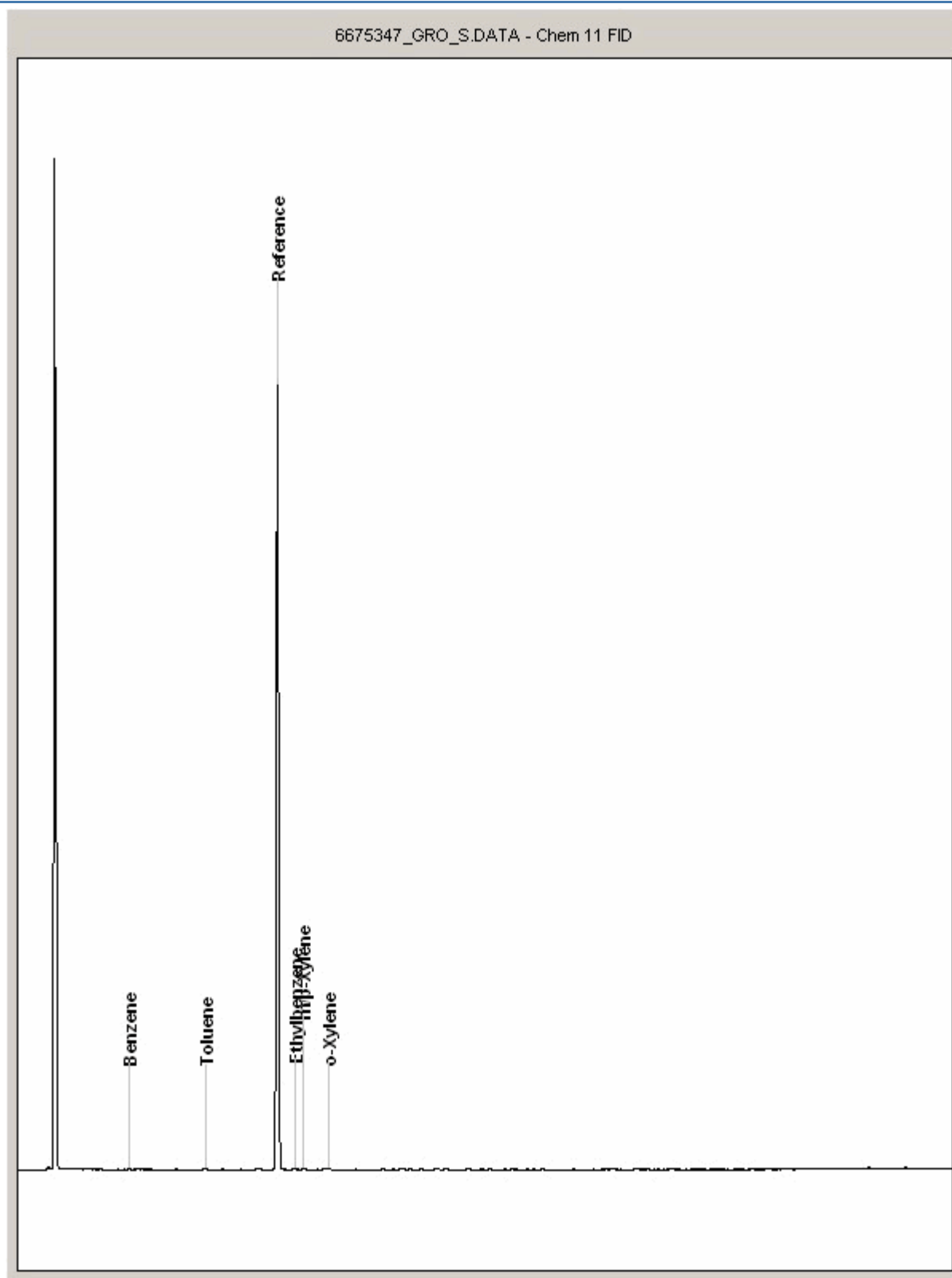
Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 6675347
Sample ID : BH102

Depth : 0.00 - 1.00





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

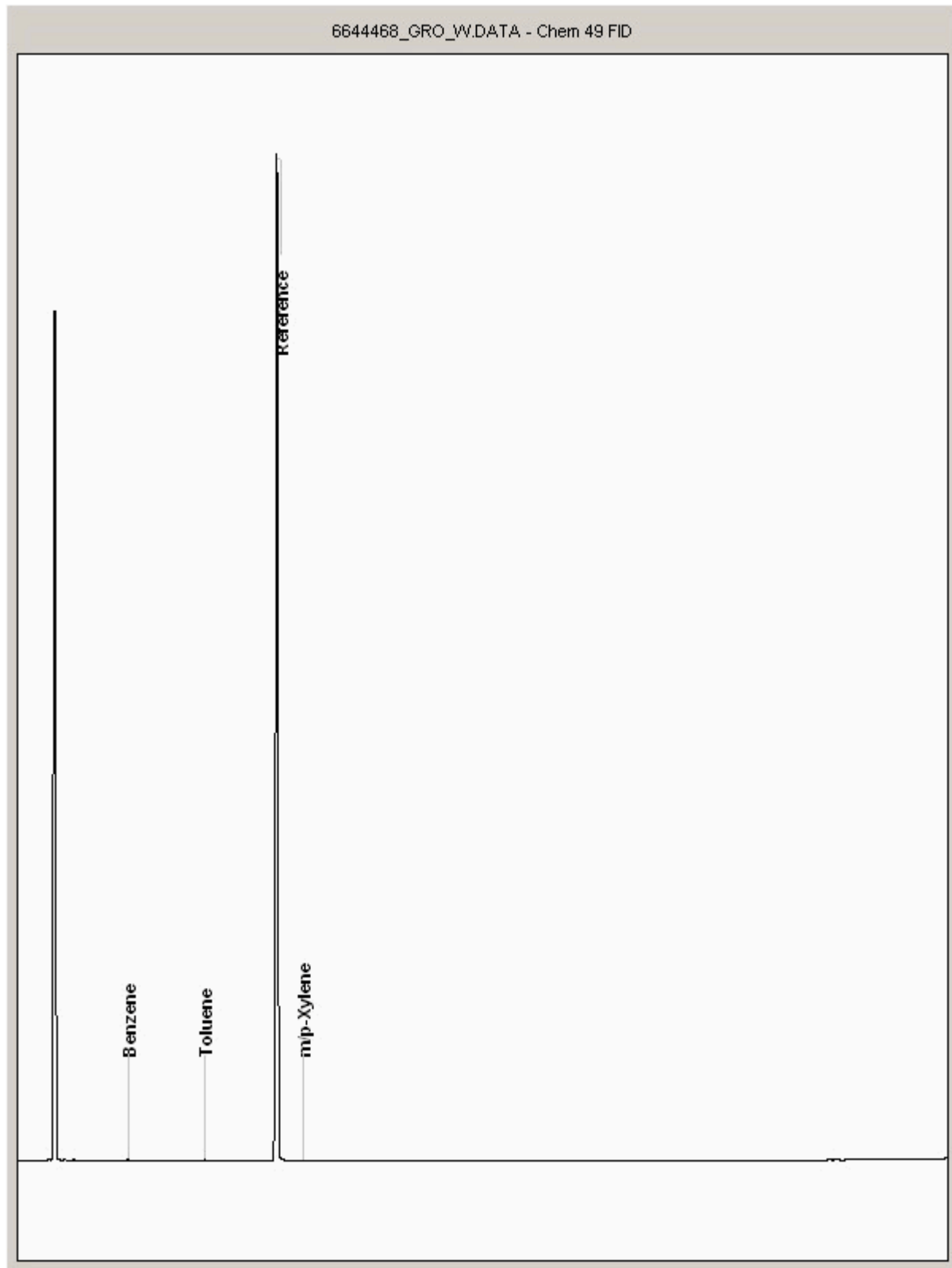
Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6644468
Sample ID : BH101

Depth : 6.00 - 8.00





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

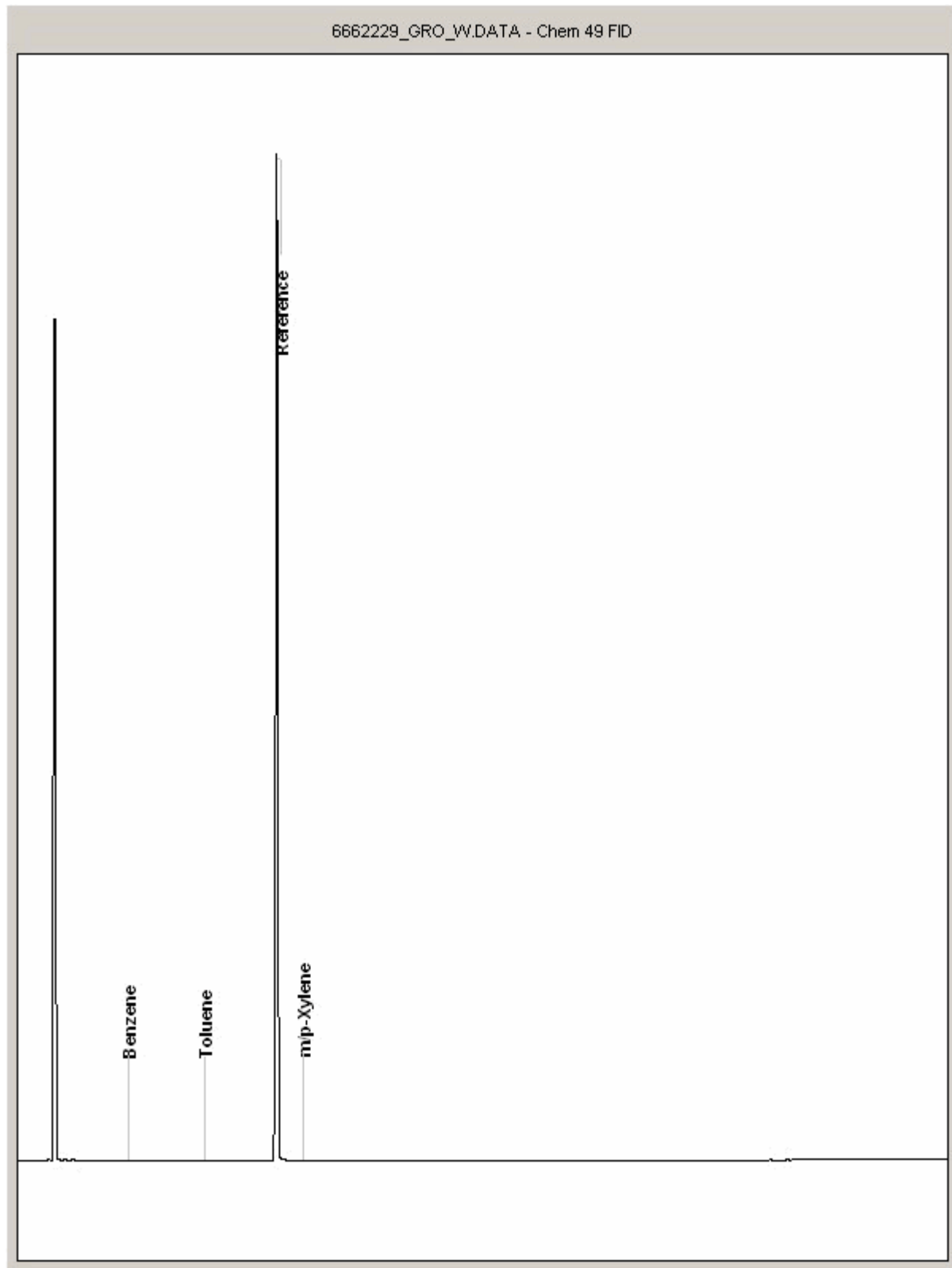
Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6662229
Sample ID : BH102

Depth : 1.00 - 6.60





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

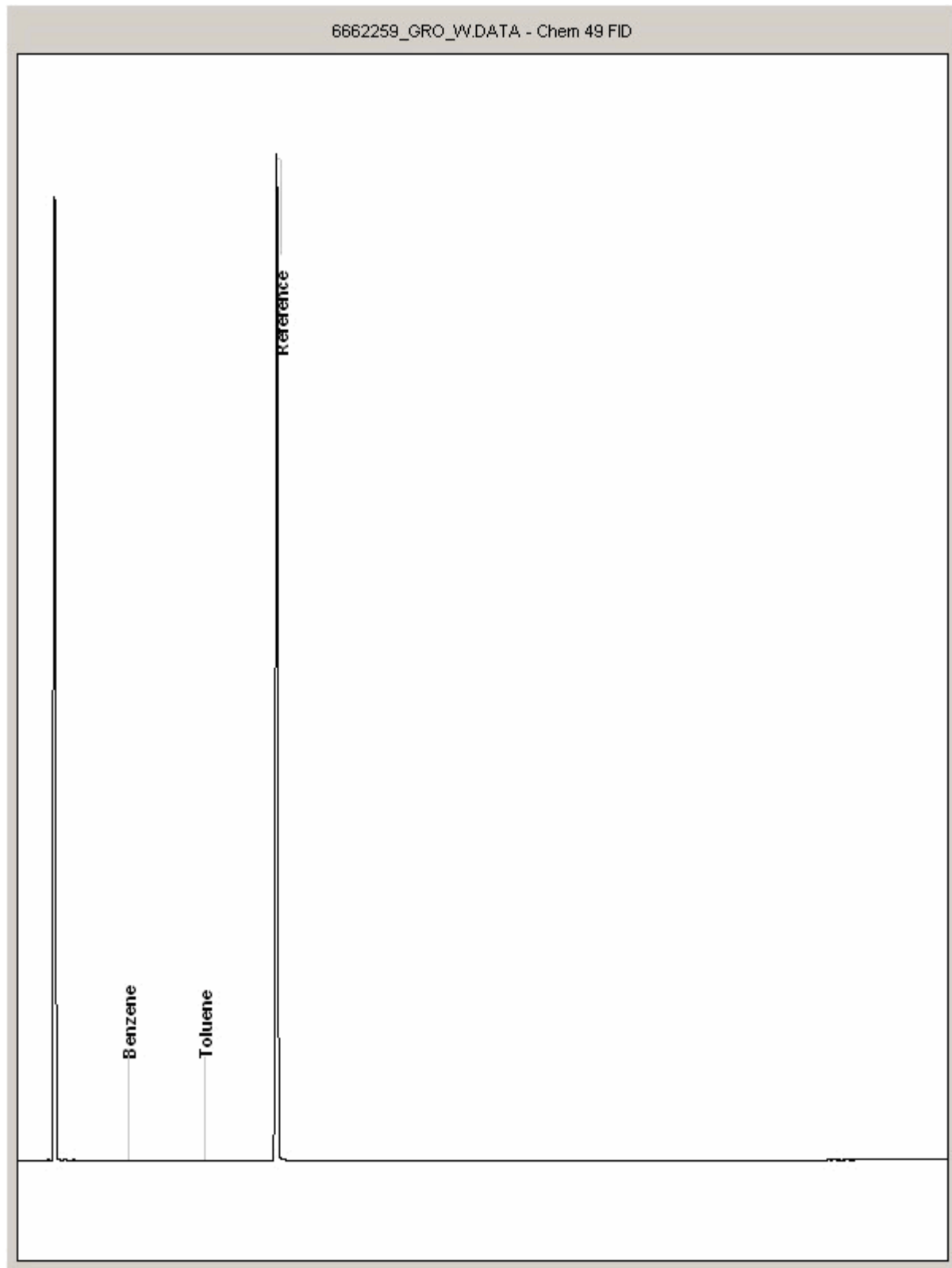
Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6662259
Sample ID : BH101

Depth : 6.00 - 8.00





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

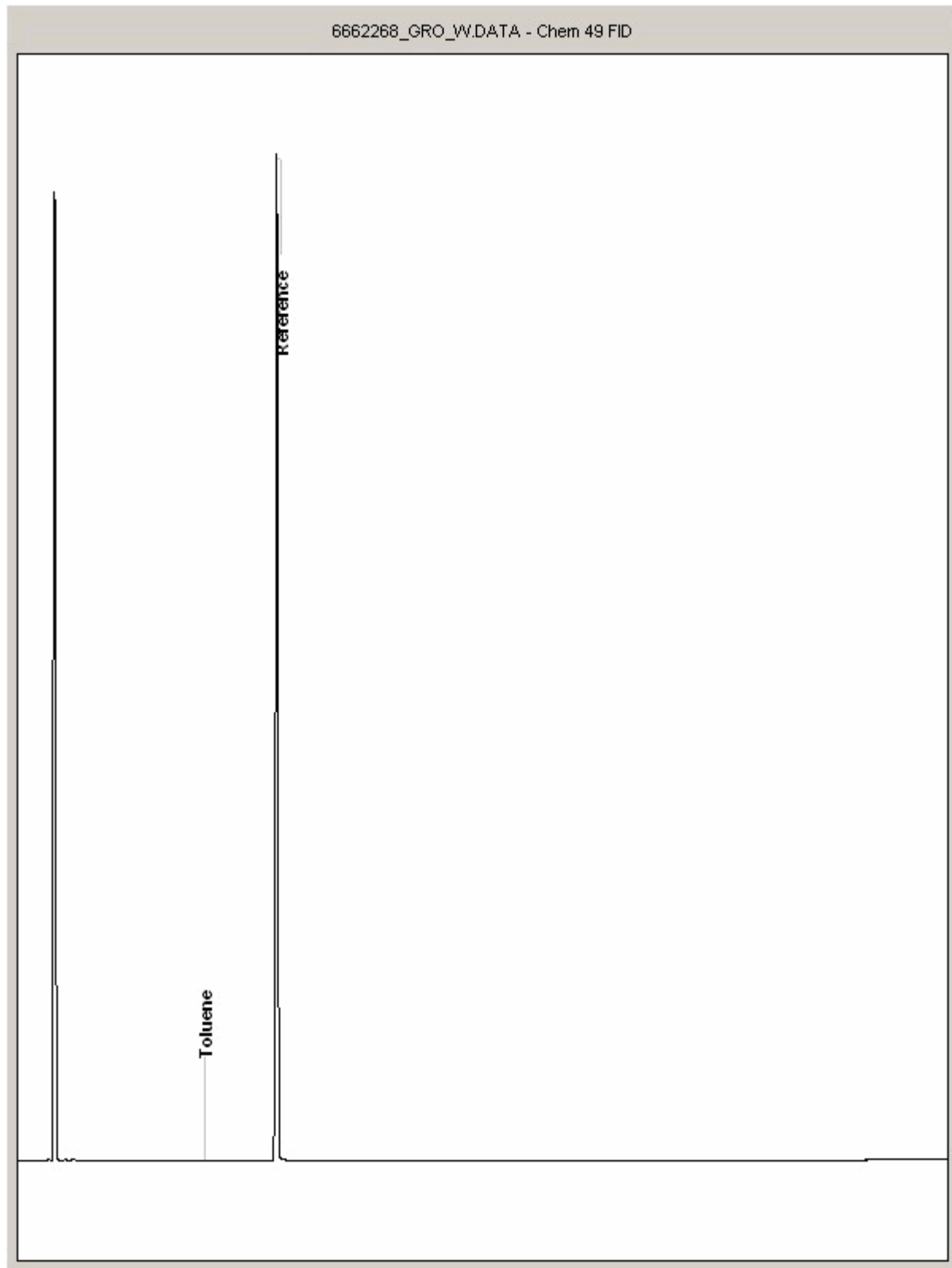
Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6662268
Sample ID : BH102

Depth : 9.30 - 11.40





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

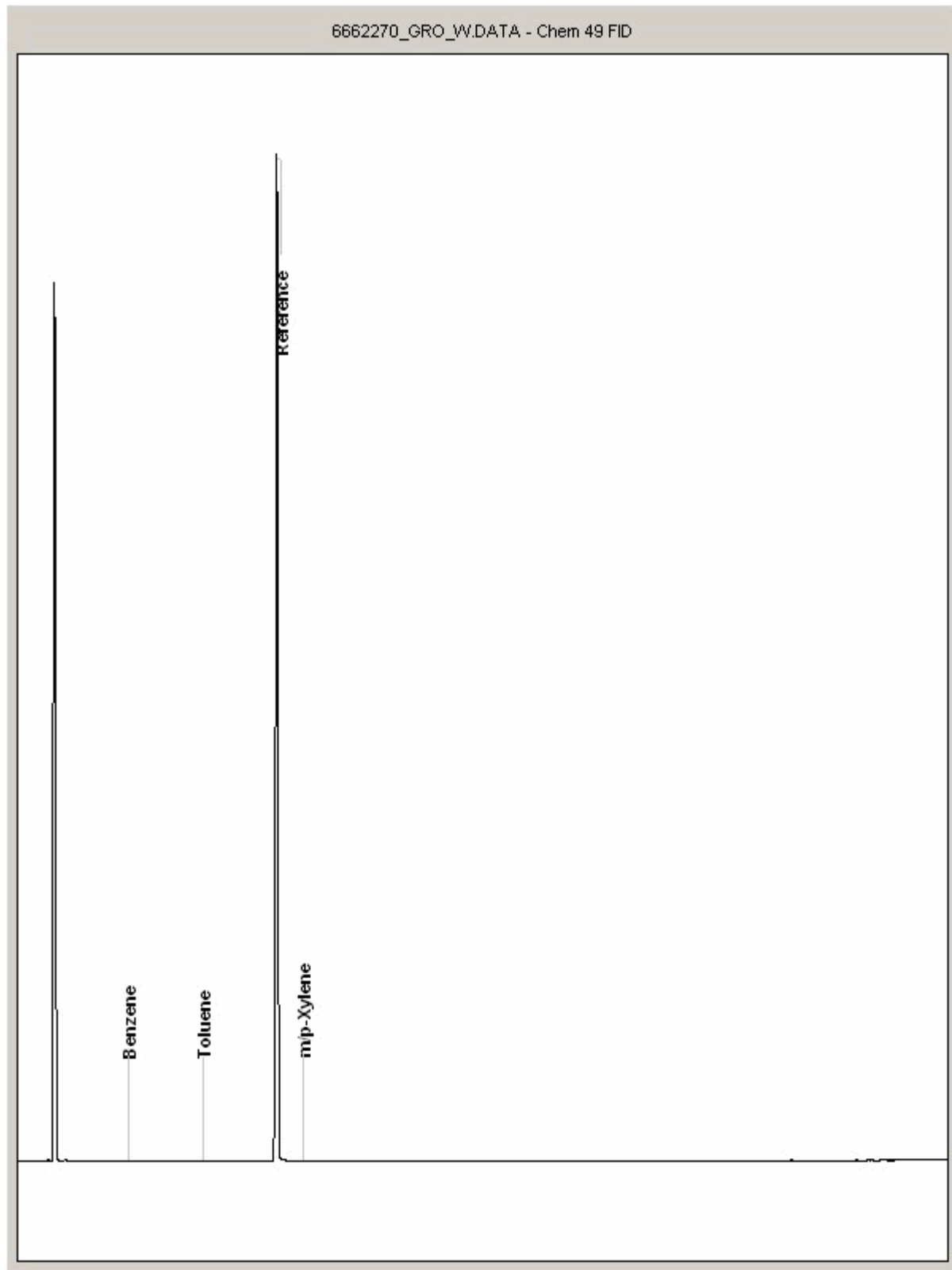
Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6662270
Sample ID : BH101

Depth : 1.00 - 6.00





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

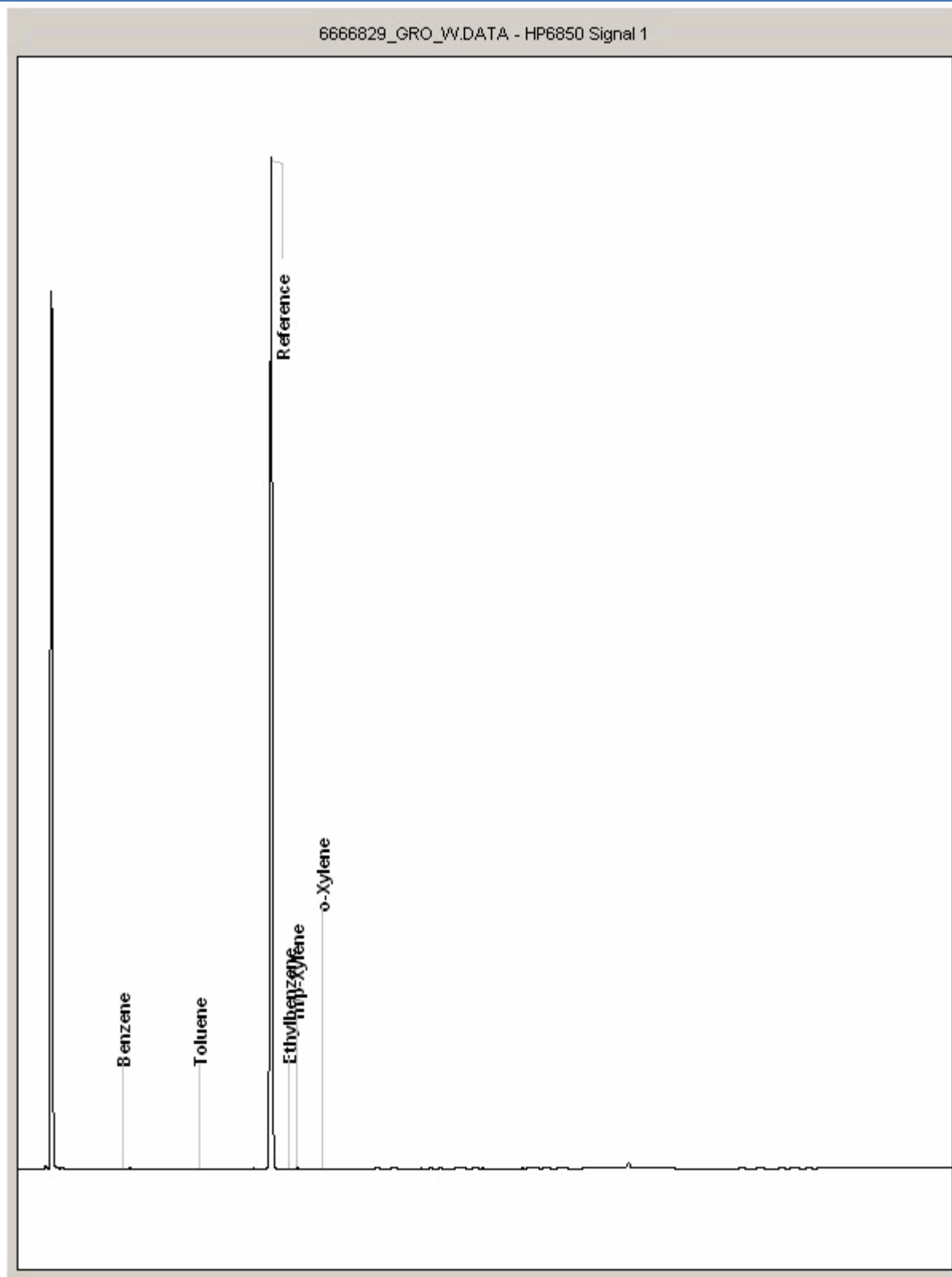
Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6666829
Sample ID : BH102

Depth : 6.60 - 9.30





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

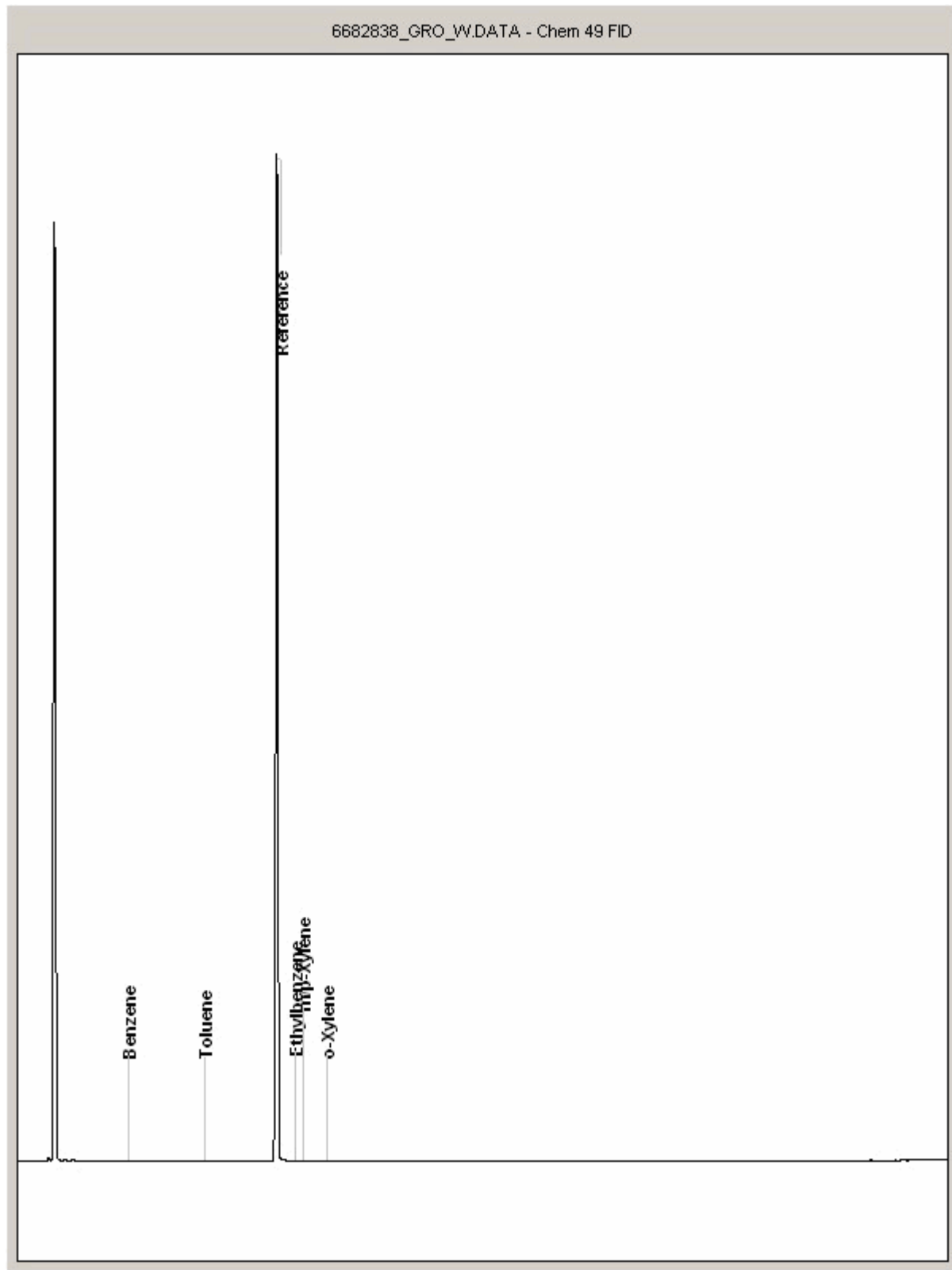
Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6682838
Sample ID : BH102

Depth : 9.30 - 11.40





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

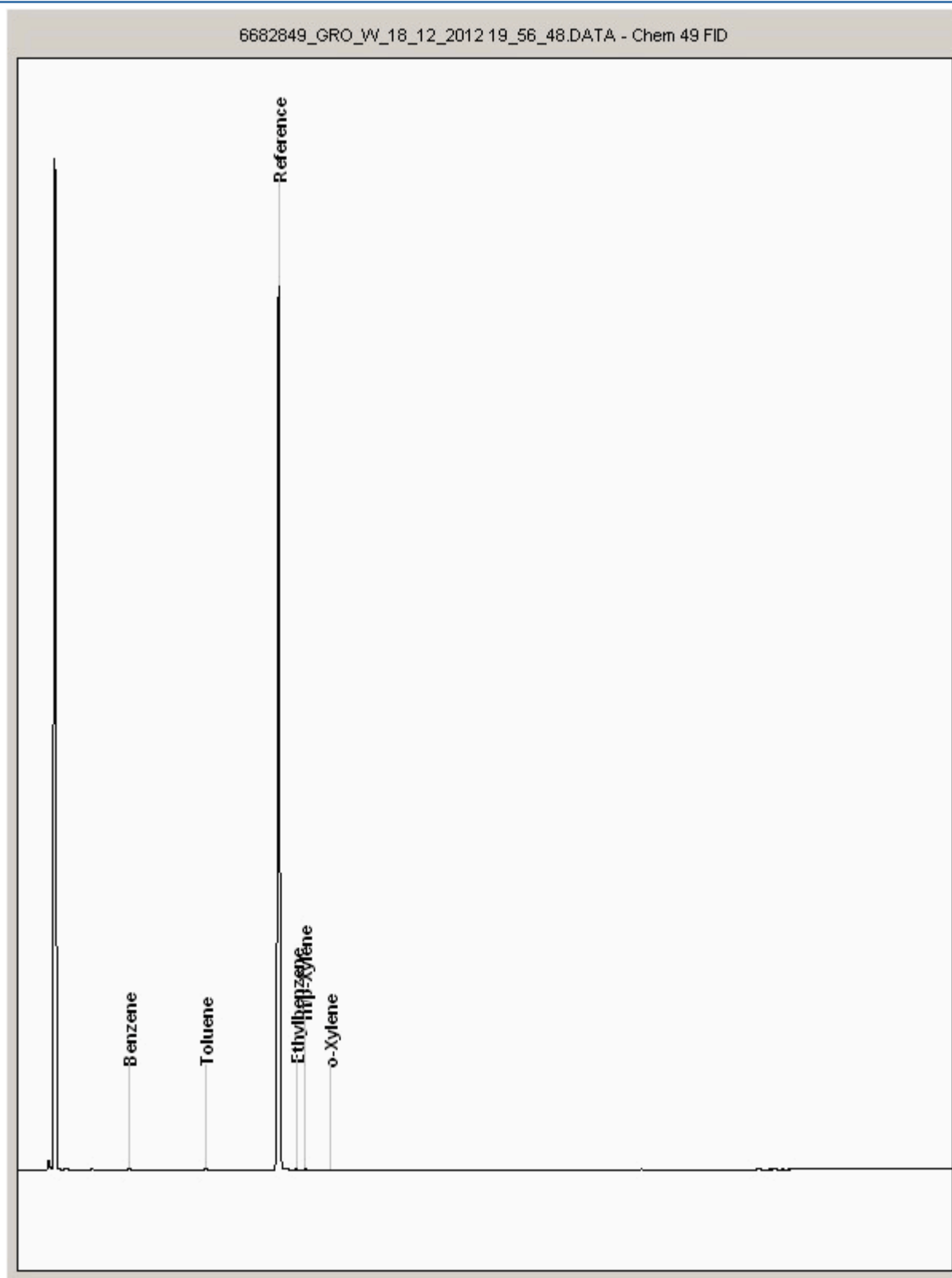
Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6682849
Sample ID : BH102

Depth : 1.00 - 6.60





SDG: 121207-92
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

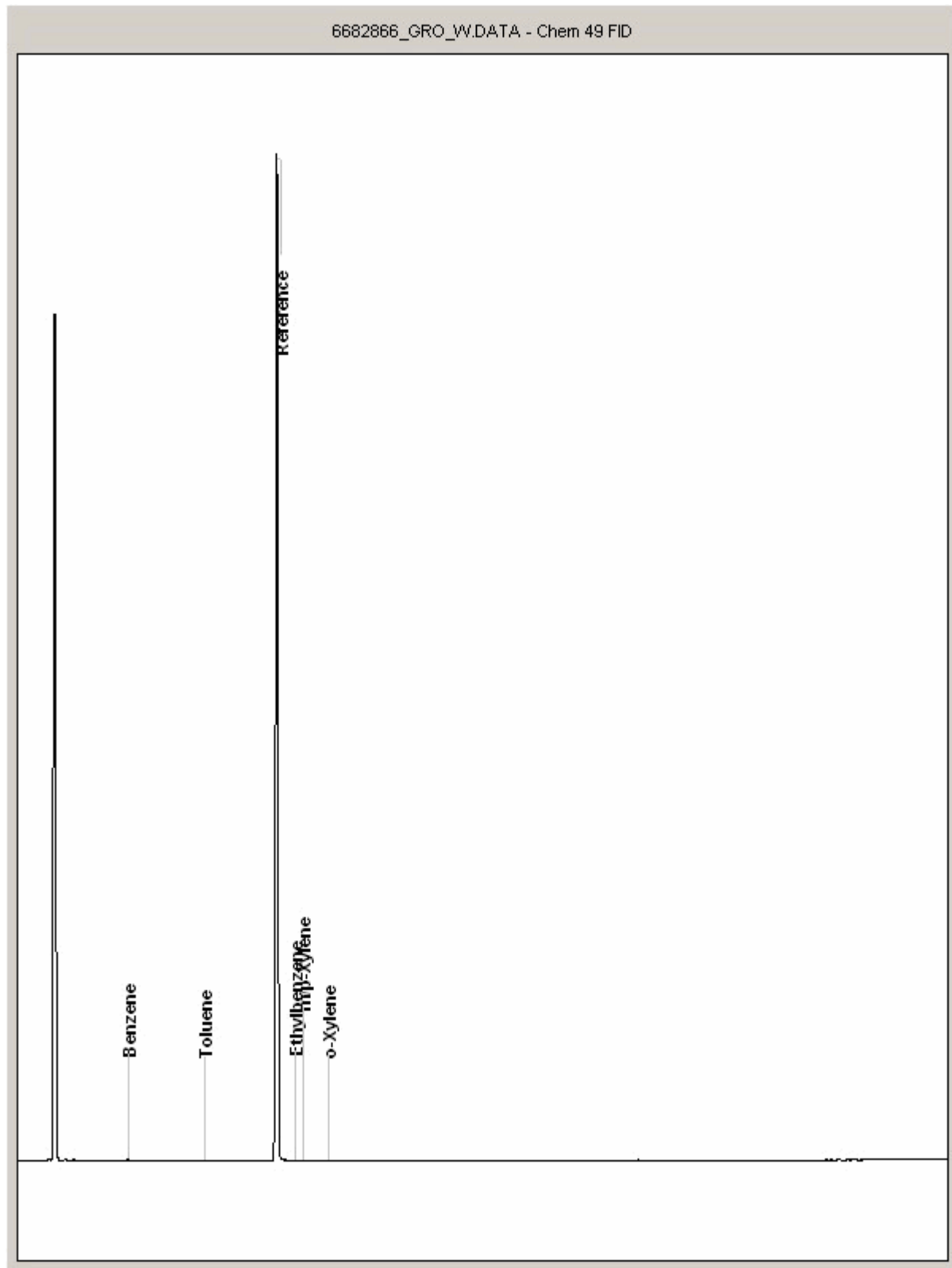
Order Number: R/PDEMEDINA.9
Report Number: 206604
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6682866
Sample ID : BH101

Depth : 1.00 - 6.00





SDG:	121207-92	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	206604
Client Reference:		Attention:	Antony Platt	Superseded Report:	

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.
2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.
4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.
7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.
8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
9. NDP -No determination possible due to insufficient/unsuitable sample.
10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.
11. Results relate only to the items tested.
12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.
13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.
14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).
16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).
17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.
22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill /made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
§	Sampled on date not provided
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than :
-
Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Mayer Brown Ltd
Lion House
Oriental Road
Woking
Surrey
GU22 8AR

Attention: Antony Platt

CERTIFICATE OF ANALYSIS

Date: 08 January 2013
Customer: H_MAYERBROW_WOK
Sample Delivery Group (SDG): 121217-21
Your Reference:
Location: Medina
Report No: 207731

We received 10 samples on Friday December 14, 2012 and 10 of these samples were scheduled for analysis which was completed on Tuesday January 08, 2013. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan

Operations Manager





SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
6675508	BH 103		0.50	12/12/2012
6675503	BH 103		0.50 - 3.00	12/12/2012
6675502	BH 103		3.00 - 7.50	12/12/2012
6675500	BH 104		0.50	12/12/2012
6675507	BH 104		2.50	12/12/2012
6675504	BH 104		3.50	12/12/2012
6675505	BH 104		4.80	12/12/2012
6675509	BH 105		0.50	12/12/2012
6675510	BH 105		3.00	12/12/2012
6675501	BH 105		4.50	12/12/2012

Only received samples which have had analysis scheduled will be shown on the following pages.



SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

SOLID Results Legend <div> <div>X</div> Test </div> <div> <div>N</div> No Determination Possible </div>	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container	
	6675501		BH 105				4.50		400g Tub (ALE214)	
	6675510		BH 105				3.00		250g Amber Jar (AL)	
	6675509		BH 105				0.50		1kg TUB	
	6675505		BH 104				4.80		60g VOC (ALE215)	
Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 7							400g Tub (ALE214)	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7							250g Amber Jar (AL)	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3							1kg TUB	
Anions by Kone (soil)	All	NDPs: 0 Tests: 3							400g Tub (ALE214)	
Anions by Kone (w)	All	NDPs: 0 Tests: 7							250g Amber Jar (AL)	
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 3							1kg TUB	
Boron Water Soluble	All	NDPs: 0 Tests: 3							60g VOC (ALE215)	
CEN 2:1 Readings	All	NDPs: 0 Tests: 7							400g Tub (ALE214)	
CEN 8:1 Readings	All	NDPs: 0 Tests: 7							250g Amber Jar (AL)	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 10							1kg TUB	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7							250g Amber Jar (AL)	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7							1kg TUB	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 3							250g Amber Jar (AL)	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7							400g Tub (ALE214)	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 3							250g Amber Jar (AL)	



CERTIFICATE OF ANALYSIS

SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

SOLID Results Legend <div><div>X</div> Test</div> <div><div>N</div> No Determination Possible</div>	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container	
	6675501		BH 105				4.50		400g Tub (ALE214)	
	6675510		BH 105				3.00		250g Amber Jar (AL)	
	6675509		BH 105				0.50		60g VOC (ALE215)	
	6675505		BH 104				4.80		400g Tub (ALE214)	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3							250g Amber Jar (AL)	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7							1kg Tub	
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 7							60g VOC (ALE215)	
Mercury Unfiltered	All	NDPs: 0 Tests: 7							400g Tub (ALE214)	
Metals by iCap-OES (Soil)	Antimony	NDPs: 0 Tests: 3							250g Amber Jar (AL)	
	Arsenic	NDPs: 0 Tests: 3							1kg Tub	
	Barium	NDPs: 0 Tests: 3							60g VOC (ALE215)	
	Beryllium	NDPs: 0 Tests: 3							400g Tub (ALE214)	
	Cadmium	NDPs: 0 Tests: 3							250g Amber Jar (AL)	
	Chromium	NDPs: 0 Tests: 3							1kg Tub	
	Copper	NDPs: 0 Tests: 3							250g Amber Jar (AL)	
	Lead	NDPs: 0 Tests: 3							1kg Tub	
	Mercury	NDPs: 0 Tests: 3							60g VOC (ALE215)	
	Molybdenum	NDPs: 0 Tests: 3							400g Tub (ALE214)	
	Nickel	NDPs: 0 Tests: 3							250g Amber Jar (AL)	



SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

SOLID																
Results Legend <div><div>X</div> Test</div> <div><div>N</div> No Determination Possible</div>	Lab Sample No(s)															
	Customer Sample Reference															
	AGS Reference															
	Depth (m)															
	Container															
Metals by iCap-OES (Soil)	Selenium	NDPs: 0 Tests: 3	X				X					X				
	Zinc	NDPs: 0 Tests: 3	X				X					X				
PAH by GCMS	All	NDPs: 0 Tests: 3	X				X					X				
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 7			X	X			X	X	X			X		X
pH	All	NDPs: 0 Tests: 3	X				X					X				
pH Value	All	NDPs: 0 Tests: 7			X	X			X	X	X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3	X				X					X				
Sample description	All	NDPs: 0 Tests: 10	X		X	X	X		X	X	X	X		X	X	
Total Organic Carbon	All	NDPs: 8 Tests: 2	N		N	N			N	N	N			N	N	
Total Organic Carbon (Asb)	All	NDPs: 0 Tests: 1	X													
TPH CWG (W)	All	NDPs: 0 Tests: 7			X	X			X	X	X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 3	X				X					X				



SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
6675502	BH 103	3.00 - 7.50	Dark Brown	N/A	0.1 - 2 mm	Stones	Brick
6675503	BH 103	0.50 - 3.00	Grey	Sandy Clay Loam	0.1 - 2 mm	Stones	Brick
6675508	BH 103	0.50	Light Brown	Clay	0.063 - 0.1 mm	None	Stones
6675500	BH 104	0.50	Beige	Silty Clay	<0.063 mm	N/A	N/A
6675504	BH 104	3.50	Dark Brown	Loamy Sand	0.1 - 2 mm	Glass & Stones	Concrete/Aggregate
6675505	BH 104	4.80	Light Brown	Clay	0.063 - 0.1 mm	None	None
6675507	BH 104	2.50	Black	N/A	0.1 - 2 mm	Stones	Brick
6675501	BH 105	4.50	Light Brown	Clay	0.063 - 0.1 mm	None	None
6675509	BH 105	0.50	Light Brown	Clay	0.063 - 0.1 mm	None	Stones
6675510	BH 105	3.00	Grey	Sandy Clay Loam	0.1 - 2 mm	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Page 7 of 94



CERTIFICATE OF ANALYSIS

SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

PAH by GCMS

Results Legend		Customer Sample R	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	BH 103	BH 104	BH 105			
#	ISO17025 accredited.			0.50	0.50	0.50			
M	mCERTS accredited.			Soil/Solid	Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.			12/12/2012	12/12/2012	12/12/2012			
diss.filt	Dissolved / filtered sample.			-	-	-			
tot.unfilt	Total / unfiltered sample.			14/12/2012	14/12/2012	14/12/2012			
*	Subcontracted test.			121217-21	121217-21	121217-21			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery			6675508	6675500	6675509			
(F)	Trigger breach confirmed								
1-4&*\$@	Sample deviation (see appendix)								
Component	LOD/Units	Method							
Perylene-d12 % recovery**	%	TM218	89.2	102	83.4				
Naphthalene	<0.009 mg/kg	TM218	0.0234 M	<0.009 @ M	<0.009 M				
Acenaphthylene	<0.012 mg/kg	TM218	0.0166 M	<0.012 @ M	<0.012 M				
Acenaphthene	<0.008 mg/kg	TM218	<0.008 M	<0.008 @ M	<0.008 M				
Fluorene	<0.01 mg/kg	TM218	<0.01 M	<0.01 @ M	<0.01 M				
Phenanthrene	<0.015 mg/kg	TM218	0.112 M	<0.015 @ M	<0.015 M				
Anthracene	<0.016 mg/kg	TM218	0.0253 M	<0.016 @ M	<0.016 M				
Fluoranthene	<0.017 mg/kg	TM218	0.224 M	<0.017 @ M	0.0398 M				
Pyrene	<0.015 mg/kg	TM218	0.193 M	<0.015 @ M	0.0335 M				
Benz(a)anthracene	<0.014 mg/kg	TM218	0.112 M	<0.014 @ M	<0.014 M				
Chrysene	<0.01 mg/kg	TM218	0.135 M	<0.01 @ M	0.0172 M				
Benzo(b)fluoranthene	<0.015 mg/kg	TM218	0.137 M	<0.015 @ M	0.0206 M				
Benzo(k)fluoranthene	<0.014 mg/kg	TM218	0.0524 M	<0.014 @ M	<0.014 M				
Benzo(a)pyrene	<0.015 mg/kg	TM218	0.12 M	<0.015 @ M	0.0212 M				
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218	0.069 M	<0.018 @ M	<0.018 M				
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218	<0.023 M	<0.023 @ M	<0.023 M				
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218	0.0903 M	<0.024 @ M	<0.024 M				
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218	1.31	<0.118	0.132				
				</					



CERTIFICATE OF ANALYSIS

SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample R	BH 103	BH 104	BH 105			
#	ISO17025 accredited.							
M	mCERTS accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.50 Soil/Solid 12/12/2012 . 14/12/2012 121217-21 6675508	0.50 Soil/Solid 12/12/2012 . 14/12/2012 121217-21 6675500	0.50 Soil/Solid 12/12/2012 . 14/12/2012 121217-21 6675509			
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-4	@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	62	100	83			
GRO >C5-C12	<0.044 mg/kg	TM089	<0.044	<0.044	<0.044			
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089	<0.005 @ #	<0.005 @ #	<0.005 @ #			
Benzene	<0.01 mg/kg	TM089	<0.01 @ M	<0.01 @ M	<0.01 @ M			
Toluene	<0.002 mg/kg	TM089	0.00254 @ M	<0.002 @ M	<0.002 @ M			
Ethylbenzene	<0.003 mg/kg	TM089	<0.003 @ M	<0.003 @ M	<0.003 @ M			
m,p-Xylene	<0.006 mg/kg	TM089	<0.006 @ M	<0.006 @ M	<0.006 @ M			
o-Xylene	<0.003 mg/kg	TM089	<0.003 @ M	<0.003 @ M	<0.003 @ M			
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089	<0.009	<0.009	<0.009			
sum of detected BTEX by GC	<0.024 mg/kg	TM089	<0.024	<0.024	<0.024			
Aliphatics >C5-C6	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01			
Aliphatics >C6-C8	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01			
Aliphatics >C8-C10	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01			
Aliphatics >C10-C12	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01			
Aliphatics >C12-C16	<0.1 mg/kg	TM173	8.17	<0.1	7.83			
Aliphatics >C16-C21	<0.1 mg/kg	TM173	4.96	<0.1	13.2			
Aliphatics >C21-C35	<0.1 mg/kg	TM173	31.6	12	144			
Aliphatics >C35-C44	<0.1 mg/kg	TM173	15.7	<0.1	59.2			
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173	60.4	12	224			
Aromatics >EC5-EC7	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01			
Aromatics >EC7-EC8	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01			
Aromatics >EC8-EC10	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01			
Aromatics >EC10-EC12	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01			
Aromatics >EC12-EC16	<0.1 mg/kg	TM173	4.3	<0.1	3.1			
Aromatics >EC16-EC21	<0.1 mg/kg	TM173	15	0.573	13.6			
Aromatics >EC21-EC35	<0.1 mg/kg	TM173	53.2	6.85	89.6			
Aromatics >EC35-EC44	<0.1 mg/kg	TM173	19.9	<0.1	38.8			
Aromatics >EC40-EC44	<0.1 mg/kg	TM173	7.34	<0.1	14.2			
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173	92.4	7.42	145			
Total Aliphatics >C5-35	<0.1 mg/kg	TM173	44.8	12	165			
Total Aromatics >C5-35	<0.1 mg/kg	TM173	72.5	7.43	106			
Total Aliphatics & Aromatics >C5-35	<0.1 mg/kg	TM173	117	19.4	271			

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

09:49:18 08/01/2013



SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH 103 0.50 SOLID 12/12/2012 00:00:00 121217-21 6675508 TM048	28/12/12	Kevin Bowron	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH 104 0.50 SOLID 12/12/2012 00:00:00 121217-21 6675500 TM048	28/12/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH 105 0.50 SOLID 12/12/2012 00:00:00 121217-21 6675509 TM048	28/12/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.235	Moisture Content Ratio (%)	34.3
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	74.5
Particle Size <4mm	>95%		

Case SDG121217-21 Lab Sample Number(s)6675501 Sampled Date12-Dec-2012 Customer Sample Ref.BH 105 Depth (m)4.50		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)		-	-	-
Loss on Ignition (%)		-	-	-
Sum of BTEX (mg/kg)		-	-	-
Sum of 7 PCBs (mg/kg)		-	-	-
Mineral Oil (mg/kg)		-	-	-
PAH Sum of 17 (mg/kg)		-	-	-
pH (pH Units)		-	-	-
ANC to pH 6 (mol/kg)		-	-	-
ANC to pH 4 (mol/kg)		-	-	-

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
Arsenic	0.000433	0.000172	0.000866	0.00201	0.5	2	25
Barium	0.0222	0.0175	0.0444	0.18	20	100	300
Cadmium	<0.0001	<0.0001	<0.0002	<0.001	0.04	1	5
Chromium	0.000825	0.000662	0.00165	0.0068	0.5	10	70
Copper	0.00243	0.001	0.00487	0.0116	2	50	100
Mercury Dissolved (CVAf)	-	-	-	-	0.01	0.2	2
Molybdenum	0.000375	0.00135	0.00075	0.0124	0.5	10	30
Nickel	0.00245	0.000585	0.0049	0.00789	0.4	10	40
Lead	0.000079	0.000077	0.000158	0.000772	0.5	10	50
Antimony	<0.00016	<0.00016	<0.00032	<0.0016	0.06	0.7	5
Selenium	0.000961	<0.00039	0.00192	<0.0039	0.1	0.5	7
Zinc	0.00983	0.000801	0.0197	0.0179	4	50	200
Chloride	61.2	6.2	122	122	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	398	67.1	796	1030	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	-	-	-	-	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.258	8.024
Conductivity (µS/cm)	927.00	231.00
Temperature (°C)	20.10	20.40
Volume Leachant (Litres)	0.290	1.400
Volume of Eluate VE1 (Litres)	0.192	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27



SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.235	Moisture Content Ratio (%)	34.3
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	74.5
Particle Size <4mm	>95%		

Case SDG121217-21 Lab Sample Number(s)6675501 Sampled Date12-Dec-2012 Customer Sample Ref.BH 105 Depth (m)4.50		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)		-	-	-
Loss on Ignition (%)		-	-	-
Sum of BTEX (mg/kg)		-	-	-
Sum of 7 PCBs (mg/kg)		-	-	-
Mineral Oil (mg/kg)		-	-	-
PAH Sum of 17 (mg/kg)		-	-	-
pH (pH Units)		-	-	-
ANC to pH 6 (mol/kg)		-	-	-
ANC to pH 4 (mol/kg)		-	-	-

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
Mercury Unfiltered	<0.00002	<0.00002	<0.00004	<0.0002	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<0.4	<2	-	-	-
Phenol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Total Ammonium as NH4	<0.3	<0.3	<0.6	<3	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.1	<0.5	-	-	-
Cresols by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	-	-	-
Nitrate as N	<0.0677	<0.0677	<0.135	<0.677	-	-	-
Xylenols by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Napthol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
2,3,5 Trimethyl-Phenol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Boron	0.0899	0.042	0.18	0.473	-	-	-
Total Alkalinity Filtered as CaCO3	100	55	200	599	-	-	-
Phenols Total of 5 Speciated by HPLC (W)	<0.00064	<0.00064	<0.00128	<0.0064	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.0002	<0.001	-	-	-
Acenaphthene by GCMS	0	<0.000015	0.000056	<0.00015	-	-	-
Acenaphthylene by GCMS	<0.000011	<0.000011	<0.000022	<0.00011	-	-	-
Fluoranthene by GCMS	<0.000017	<0.000017	<0.000034	<0.00017	-	-	-
Anthracene by GCMS	<0.000015	<0.000015	<0.00003	<0.00015	-	-	-
Phenanthrene by GCMS	<0.000022	<0.000022	<0.000044	<0.00022	-	-	-
Fluorene by GCMS	0	<0.000014	0.0000349	<0.00014	-	-	-
Chrysene by GCMS	<0.000013	<0.000013	<0.000026	<0.00013	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.258	8.024
Conductivity (µS/cm)	927.00	231.00
Temperature (°C)	20.10	20.40
Volume Leachant (Litres)	0.290	1.400
Volume of Eluate VE1 (Litres)	0.192	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27



SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.235	Moisture Content Ratio (%)	34.3
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	74.5
Particle Size <4mm	>95%		

<div>Case</div> <div>SDG121217-21</div> <div>Lab Sample Number(s)6675501</div> <div>Sampled Date12-Dec-2012</div> <div>Customer Sample Ref.BH 105</div> <div>Depth (m)4.50</div> <div>Solid Waste Analysis</div> <div>Total Organic Carbon (%) -</div> <div>Loss on Ignition (%) -</div> <div>Sum of BTEX (mg/kg) -</div> <div>Sum of 7 PCBs (mg/kg) -</div> <div>Mineral Oil (mg/kg) -</div> <div>PAH Sum of 17 (mg/kg) -</div> <div>pH (pH Units) -</div> <div>ANC to pH 6 (mol/kg) -</div> <div>ANC to pH 4 (mol/kg) -</div>		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill

Eluate Analysis	C2 Conc ⁿ in 2:1 eluate	C8 Conc ⁿ in 8:1 eluate	A2 2:1 conc ⁿ leached	A2-10 Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
PAH Spec MS - Aqueous (W)							
Pyrene by GCMS	<0.000015	<0.000015	<0.00003	<0.00015	-	-	-
Benz(a)anthracene by GCMS	<0.000017	<0.000017	<0.000034	<0.00017	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000023	<0.000023	<0.000046	<0.00023	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000027	<0.000027	<0.000054	<0.00027	-	-	-
Benzo(a)pyrene by GCMS	<0.000009	<0.000009	<0.000018	<0.00009	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Benzo(ghi)perylene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000014	<0.000014	<0.000028	<0.00014	-	-	-
PAH 16 EPA Total by GCMS	<0.000247	<0.000247	<0.000494	<0.00247	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	-	-	-	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.006	<0.03	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics & Aromatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.258	8.024
Conductivity (µS/cm)	927.00	231.00
Temperature (°C)	20.10	20.40
Volume Leachant (Litres)	0.290	1.400
Volume of Eluate VE1 (Litres)	0.192	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27



CERTIFICATE OF ANALYSIS

SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.235	Moisture Content Ratio (%)	34.3
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	74.5
Particle Size <4mm	>95%		

Case		Landfill Waste Acceptance Criteria Limits		
SDG	121217-21	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Lab Sample Number(s)	6675501			
Sampled Date	12-Dec-2012			
Customer Sample Ref.	BH 105			
Depth (m)	4.50			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	C2	Conc ⁿ in 2:1 eluate	C8	Conc ⁿ in 8:1 eluate	A2	2:1 conc ⁿ leached	A2-10	Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l			mg/kg							
TPH CWG (W)											
Benzene by GC		<0.007		<0.007		<0.014		<0.07	-	-	-
Toluene by GC		<0.004		<0.004		<0.008		<0.04	-	-	-
Ethylbenzene by GC		<0.005		<0.005		<0.01		<0.05	-	-	-
m & p Xylene by GC		<0.008		<0.008		<0.016		<0.08	-	-	-
o Xylene by GC		<0.003		<0.003		<0.006		<0.03	-	-	-
Sum m&p and o Xylene by GC		<0.011		<0.011		<0.022		<0.11	-	-	-
Sum of BTEX by GC		<0.028		<0.028		<0.056		<0.28	-	-	-
Aromatics >EC8 -EC10		<0.01		<0.01		<0.02		<0.1	-	-	-
Aromatics >EC10-EC12		<0.01		<0.01		<0.02		<0.1	-	-	-
Aromatics >EC12-EC16		<0.01		<0.01		<0.02		<0.1	-	-	-
Aromatics >EC16-EC21		<0.01		<0.01		<0.02		<0.1	-	-	-
Aromatics >EC21-EC35		<0.01		<0.01		<0.02		<0.1	-	-	-
Total Aromatics >EC12-EC35		<0.01		<0.01		<0.02		<0.1	-	-	-
Total Aliphatics >C5-C35 Aqueous		<0.01		<0.01		-		-	-	-	-
Total Aromatics >C6-C35 Aqueous		<0.01		<0.01		-		-	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35		<0.01		<0.01		-		-	-	-	-
Total Aliphatics C5-C12		<0.01		<0.01		<0.02		<0.1	-	-	-
Total Aromatics C6-C12		<0.01		<0.01		<0.02		<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.258	8.024
Conductivity (µS/cm)	927.00	231.00
Temperature (°C)	20.10	20.40
Volume Leachant (Litres)	0.290	1.400
Volume of Eluate VE1 (Litres)	0.192	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27



CERTIFICATE OF ANALYSIS

SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.233	Moisture Content Ratio (%)	33
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	75.2
Particle Size <4mm	>95%		

Case		Landfill Waste Acceptance Criteria Limits		
SDG	121217-21	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Lab Sample Number(s)	6675502			
Sampled Date	12-Dec-2012			
Customer Sample Ref.	BH 103			
Depth (m)	3.00 - 7.50			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 2:1 eluate	C ₈ Conc ⁿ in 8:1 eluate	A ₂ 2:1 conc ⁿ leached	A ₂₋₁₀ Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
Arsenic	0.00494	0.00129	0.00988	0.018	0.5	2	25
Barium	0.256	0.102	0.512	1.23	20	100	300
Cadmium	<0.0001	<0.0001	<0.0002	<0.001	0.04	1	5
Chromium	0.00103	0.000985	0.00206	0.00991	0.5	10	70
Copper	0.00347	0.0046	0.00694	0.0444	2	50	100
Mercury Dissolved (CVAf)	-	-	-	-	0.01	0.2	2
Molybdenum	0.0217	0.0116	0.0434	0.13	0.5	10	30
Nickel	0.00479	0.00421	0.00958	0.0429	0.4	10	40
Lead	0.000174	0.000218	0.000348	0.00212	0.5	10	50
Antimony	0.00189	0.00333	0.00377	0.0313	0.06	0.7	5
Selenium	0.00514	0.000945	0.0103	0.0152	0.1	0.5	7
Zinc	0.00129	0.0177	0.00258	0.154	4	50	200
Chloride	172	7.8	343	304	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	300	210	600	2220	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	-	-	-	-	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.152	8.135
Conductivity (µS/cm)	1,295.00	578.00
Temperature (°C)	20.00	20.50
Volume Leachant (Litres)	0.292	1.400
Volume of Eluate VE1 (Litres)	0.242	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27



CERTIFICATE OF ANALYSIS

SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg)	0.233
Mass of dry sample (kg)	0.175
Particle Size <4mm	>95%

Site Location

Medina

Moisture Content Ratio (%)

33

Dry Matter Content Ratio (%)

75.2

Case

SDG	121217-21
Lab Sample Number(s)	6675502
Sampled Date	12-Dec-2012
Customer Sample Ref.	BH 103
Depth (m)	3.00 - 7.50

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Total Organic Carbon (%)	-
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	-
Sum of 7 PCBs (mg/kg)	-
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	-
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Inert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Eluate Analysis

Eluate Analysis	C2 Conc ⁿ in 2:1 eluate	C8 Conc ⁿ in 8:1 eluate	A2 2:1 conc ⁿ leached	A2-10 Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
Mercury Unfiltered	<0.00002	0.0000537	<0.00004	0.000463	-	-	-
Total Ammonia as NH3	15.9	3.06	31.7	48.3	-	-	-
Phenol by HPLC (W)	<0.0005	<0.0005	<0.000999	<0.005	-	-	-
Total Ammonium as NH4	16.8	3.24	33.7	51.2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.0999	<0.5	-	-	-
Cresols by HPLC (W)	<0.0005	<0.0005	<0.000999	<0.005	-	-	-
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	-	-	-
Nitrate as N	<0.0677	0.141	<0.135	1.21	-	-	-
Xylenols by HPLC (W)	0.00088	<0.0005	0.00176	<0.005	-	-	-
Napthol by HPLC (W)	<0.0005	<0.0005	<0.000999	<0.005	-	-	-
2.3.5 Trimethyl-Phenol by HPLC (W)	0.00093	<0.0005	0.00186	<0.005	-	-	-
Boron	0.551	0.13	1.1	1.88	-	-	-
Total Alkalinity Filtered as CaCO3	115	95	230	978	-	-	-
Phenols Total of 5 Speciated by HPLC (W)	0.00181	<0.00064	0.00362	<0.0064	-	-	-
PAH Spec MS - Aqueous (W)							
Napthalene by GCMS	<0.0001	<0.0001	<0.0002	<0.001	-	-	-
Acenaphthene by GCMS	<0.000015	0.0000558	<0.00003	0.000481	-	-	-
Acenaphthylene by GCMS	<0.000011	<0.000011	<0.000022	<0.00011	-	-	-
Fluoranthene by GCMS	0	0.0000322	0.0000482	0.000311	-	-	-
Anthracene by GCMS	<0.000015	<0.000015	<0.00003	<0.00015	-	-	-
Phenanthrene by GCMS	<0.000022	<0.000022	<0.000044	<0.00022	-	-	-
Fluorene by GCMS	<0.000014	0.0000161	<0.000028	<0.00014	-	-	-
Chrysene by GCMS	0	<0.000013	0.0000297	<0.00013	-	-	-

Leach Test Information

	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.152	8.135
Conductivity (µS/cm)	1,295.00	578.00
Temperature (°C)	20.00	20.50
Volume Leachant (Litres)	0.292	1.400
Volume of Eluate VE1 (Litres)	0.242	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

08/01/2013 09:49:27

09:49:18 08/01/2013



SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.233	Moisture Content Ratio (%)	33
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	75.2
Particle Size <4mm	>95%		

Case SDG121217-21 Lab Sample Number(s)6675502 Sampled Date12-Dec-2012 Customer Sample Ref.BH 103 Depth (m)3.00 - 7.50 Solid Waste Analysis Total Organic Carbon (%) - Loss on Ignition (%) - Sum of BTEX (mg/kg) - Sum of 7 PCBs (mg/kg) - Mineral Oil (mg/kg) - PAH Sum of 17 (mg/kg) - pH (pH Units) - ANC to pH 6 (mol/kg) - ANC to pH 4 (mol/kg) -		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill

Eluate Analysis	C2 Conc ⁿ in 2:1 eluate	C8 Conc ⁿ in 8:1 eluate	A2 2:1 conc ⁿ leached	A2-10 Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
PAH Spec MS - Aqueous (W)							
Pyrene by GCMS	0	0.000037	0.0000605	0.000361	-	-	-
Benz(a)anthracene by GCMS	<0.000017	<0.000017	<0.000034	<0.00017	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000023	<0.000023	<0.000046	<0.00023	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000027	<0.000027	<0.000054	<0.00027	-	-	-
Benzo(a)pyrene by GCMS	<0.000009	<0.000009	<0.000018	<0.00009	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Benzo(ghi)perylene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000014	<0.000014	<0.000028	<0.00014	-	-	-
PAH 16 EPA Total by GCMS	<0.000247	<0.000247	<0.000494	<0.00247	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	-	-	-	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.006	<0.03	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics & Aromatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.152	8.135
Conductivity (µS/cm)	1,295.00	578.00
Temperature (°C)	20.00	20.50
Volume Leachant (Litres)	0.292	1.400
Volume of Eluate VE1 (Litres)	0.242	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27



CERTIFICATE OF ANALYSIS

SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg)	0.233
Mass of dry sample (kg)	0.175
Particle Size <4mm	>95%

Site Location

Medina

Moisture Content Ratio (%)

33

Dry Matter Content Ratio (%)

75.2

Case

SDG	121217-21
Lab Sample Number(s)	6675502
Sampled Date	12-Dec-2012
Customer Sample Ref.	BH 103
Depth (m)	3.00 - 7.50

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Total Organic Carbon (%)	-
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	-
Sum of 7 PCBs (mg/kg)	-
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	-
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Inert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Eluate Analysis

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached	
	mg/l		mg/kg		
TPH CWG (W)					
Benzene by GC	<0.007	<0.007	<0.014	<0.07	- - -
Toluene by GC	<0.004	<0.004	<0.00799	<0.04	- - -
Ethylbenzene by GC	<0.005	<0.005	<0.00999	<0.05	- - -
m & p Xylene by GC	<0.008	<0.008	<0.016	<0.08	- - -
o Xylene by GC	<0.003	<0.003	<0.006	<0.03	- - -
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.022	<0.11	- - -
Sum of BTEX by GC	<0.028	<0.028	<0.056	<0.28	- - -
Aromatics >EC8 -EC10	<0.01	<0.01	<0.02	<0.1	- - -
Aromatics >EC10-EC12	<0.01	<0.01	<0.02	<0.1	- - -
Aromatics >EC12-EC16	<0.01	<0.01	<0.02	<0.1	- - -
Aromatics >EC16-EC21	<0.01	<0.01	<0.02	<0.1	- - -
Aromatics >EC21-EC35	<0.01	<0.01	<0.02	<0.1	- - -
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.02	<0.1	- - -
Total Aliphatics >C5-C35 Aqueous	<0.01	<0.01	-	-	- - -
Total Aromatics >C6-C35 Aqueous	<0.01	<0.01	-	-	- - -
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	-	-	- - -
Total Aliphatics C5-C12	<0.01	<0.01	<0.02	<0.1	- - -
Total Aromatics C6-C12	<0.01	<0.01	<0.02	<0.1	- - -

Leach Test Information

	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.152	8.135
Conductivity (µS/cm)	1,295.00	578.00
Temperature (°C)	20.00	20.50
Volume Leachant (Litres)	0.292	1.400
Volume of Eluate VE1 (Litres)	0.242	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

08/01/2013 09:49:27

09:49:18 08/01/2013



SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.218	Moisture Content Ratio (%)	24.2
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	80.5
Particle Size <4mm	>95%		

Case SDG121217-21 Lab Sample Number(s)6675503 Sampled Date12-Dec-2012 Customer Sample Ref.BH 103 Depth (m)0.50 - 3.00 Solid Waste Analysis Total Organic Carbon (%) - Loss on Ignition (%) - Sum of BTEX (mg/kg) - Sum of 7 PCBs (mg/kg) - Mineral Oil (mg/kg) - PAH Sum of 17 (mg/kg) - pH (pH Units) - ANC to pH 6 (mol/kg) - ANC to pH 4 (mol/kg) -		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
Arsenic	0.0059	0.00109	0.0118	0.0181	0.5	2	25
Barium	0.176	0.0679	0.351	0.841	20	100	300
Cadmium	<0.0001	<0.0001	<0.0002	<0.001	0.04	1	5
Chromium	0.00144	0.000707	0.00289	0.00817	0.5	10	70
Copper	0.00512	0.00246	0.0102	0.0286	2	50	100
Mercury Dissolved (CVAf)	-	-	-	-	0.01	0.2	2
Molybdenum	0.0366	0.00507	0.0734	0.0979	0.5	10	30
Nickel	0.0038	0.0022	0.00762	0.0244	0.4	10	40
Lead	0.000175	0.000122	0.00035	0.0013	0.5	10	50
Antimony	0.00695	0.00284	0.0139	0.0345	0.06	0.7	5
Selenium	0.00287	<0.00039	0.00574	0.0043	0.1	0.5	7
Zinc	0.0191	0.000798	0.0382	0.0354	4	50	200
Chloride	72.4	3.2	145	136	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	68.1	36.3	136	411	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	-	-	-	-	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.020	8.293
Conductivity (µS/cm)	861.00	214.00
Temperature (°C)	20.00	20.40
Volume Leachant (Litres)	0.308	1.400
Volume of Eluate VE1 (Litres)	0.262	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27



SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.218	Moisture Content Ratio (%)	24.2
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	80.5
Particle Size <4mm	>95%		

Case SDG121217-21 Lab Sample Number(s)6675503 Sampled Date12-Dec-2012 Customer Sample Ref.BH 103 Depth (m)0.50 - 3.00 Solid Waste Analysis Total Organic Carbon (%) - Loss on Ignition (%) - Sum of BTEX (mg/kg) - Sum of 7 PCBs (mg/kg) - Mineral Oil (mg/kg) - PAH Sum of 17 (mg/kg) - pH (pH Units) - ANC to pH 6 (mol/kg) - ANC to pH 4 (mol/kg) -		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill

Eluate Analysis	C2 Conc ⁿ in 2:1 eluate	C8 Conc ⁿ in 8:1 eluate	A2 2:1 conc ⁿ leached	A2-10 Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
Mercury Unfiltered	<0.00002	<0.00002	<0.00004	<0.0002	-	-	-
Total Ammonia as NH3	10.6	3.14	21.3	42.6	-	-	-
Phenol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Total Ammonium as NH4	11.3	3.32	22.5	45.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.1	<0.5	-	-	-
Cresols by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	-	-	-
Nitrate as N	<0.0677	0.121	<0.136	1.03	-	-	-
Xylenols by HPLC (W)	<0.0005	0.00109	<0.001	0.00927	-	-	-
Napthol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
2,3,5 Trimethyl-Phenol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Boron	0.21	0.0504	0.42	0.743	-	-	-
Total Alkalinity Filtered as CaCO3	185	75	370	915	-	-	-
Phenols Total of 5 Speciated by HPLC (W)	<0.00064	0.00109	<0.00128	0.00927	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.0002	<0.001	-	-	-
Acenaphthene by GCMS	0	<0.000015	0.0000387	<0.00015	-	-	-
Acenaphthylene by GCMS	<0.000011	<0.000011	<0.000022	<0.00011	-	-	-
Fluoranthene by GCMS	0	<0.000017	0.0000509	<0.00017	-	-	-
Anthracene by GCMS	<0.000015	<0.000015	<0.00003	<0.00015	-	-	-
Phenanthrene by GCMS	<0.000022	<0.000022	<0.000044	<0.00022	-	-	-
Fluorene by GCMS	<0.000014	<0.000014	<0.000028	<0.00014	-	-	-
Chrysene by GCMS	<0.000013	<0.000013	<0.000026	<0.00013	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.020	8.293
Conductivity (µS/cm)	861.00	214.00
Temperature (°C)	20.00	20.40
Volume Leachant (Litres)	0.308	1.400
Volume of Eluate VE1 (Litres)	0.262	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27



CERTIFICATE OF ANALYSIS

SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.218	Moisture Content Ratio (%)	24.2
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	80.5
Particle Size <4mm	>95%		

Case	Landfill Waste Acceptance Criteria Limits		
SDG	121217-21		
Lab Sample Number(s)	6675503		
Sampled Date	12-Dec-2012		
Customer Sample Ref.	BH 103		
Depth (m)	0.50 - 3.00		
Solid Waste Analysis			
Total Organic Carbon (%)	-		
Loss on Ignition (%)	-		
Sum of BTEX (mg/kg)	-		
Sum of 7 PCBs (mg/kg)	-		
Mineral Oil (mg/kg)	-		
PAH Sum of 17 (mg/kg)	-		
pH (pH Units)	-		
ANC to pH 6 (mol/kg)	-		
ANC to pH 4 (mol/kg)	-		

Eluate Analysis	C ₂ Conc ⁿ in 2:1 eluate	C ₈ Conc ⁿ in 8:1 eluate	A ₂ 2:1 conc ⁿ leached	A ₂₋₁₀ Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
PAH Spec MS - Aqueous (W)							
Pyrene by GCMS	0	<0.000015	0.0000435	<0.00015	-	-	-
Benz(a)anthracene by GCMS	<0.000017	<0.000017	<0.000034	<0.00017	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000023	<0.000023	<0.000046	<0.00023	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000027	<0.000027	<0.0000541	<0.00027	-	-	-
Benzo(a)pyrene by GCMS	<0.000009	<0.000009	<0.000018	<0.00009	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Benzo(ghi)perylene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000014	<0.000014	<0.000028	<0.00014	-	-	-
PAH 16 EPA Total by GCMS	<0.000247	<0.000247	<0.000495	<0.00247	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	-	-	-	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.00601	<0.03	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C6-C8	0.01	<0.01	0.02	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics & Aromatics >C12-C35	0.025	<0.01	0.0501	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.020	8.293
Conductivity (µS/cm)	861.00	214.00
Temperature (°C)	20.00	20.40
Volume Leachant (Litres)	0.308	1.400
Volume of Eluate VE1 (Litres)	0.262	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27

09:49:18 08/01/2013



CERTIFICATE OF ANALYSIS

SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg) 0.218

Mass of dry sample (kg) 0.175

Particle Size <4mm >95%

Site Location

Medina

Moisture Content Ratio (%) 24.2

Dry Matter Content Ratio (%) 80.5

Case

SDG 121217-21

Lab Sample Number(s) 6675503

Sampled Date 12-Dec-2012

Customer Sample Ref. BH 103

Depth (m) 0.50 - 3.00

Landfill Waste Acceptance
Criteria LimitsInert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Solid Waste Analysis

Total Organic Carbon (%) -

Loss on Ignition (%) -

Sum of BTEX (mg/kg) -

Sum of 7 PCBs (mg/kg) -

Mineral Oil (mg/kg) -

PAH Sum of 17 (mg/kg) -

pH (pH Units) -

ANC to pH 6 (mol/kg) -

ANC to pH 4 (mol/kg) -

Eluate Analysis

C₂Concⁿ in 2:1
eluate**C₈**Concⁿ in 8:1
eluate**A₂**2:1 concⁿ
leached**A₂₋₁₀**Cumulative
concⁿ
leachedLimit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

TPH CWG (W)

	mg/l	mg/kg	
Benzene by GC	<0.007	<0.007	<0.014
Toluene by GC	<0.004	<0.004	<0.00801
Ethylbenzene by GC	<0.005	<0.005	<0.01
m & p Xylene by GC	<0.008	<0.008	<0.016
o Xylene by GC	<0.003	<0.003	<0.00601
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.022
Sum of BTEX by GC	<0.028	<0.028	<0.0561
Aromatics >EC8 -EC10	<0.01	<0.01	<0.02
Aromatics >EC10-EC12	<0.01	<0.01	<0.02
Aromatics >EC12-EC16	<0.01	<0.01	<0.02
Aromatics >EC16-EC21	<0.01	<0.01	<0.02
Aromatics >EC21-EC35	0.025	<0.01	0.0501
Total Aromatics >EC12-EC35	0.025	<0.01	0.0501
Total Aliphatics >C5-C35 Aqueous	<0.01	<0.01	-
Total Aromatics >C6-C35 Aqueous	<0.01	<0.01	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	-
Total Aliphatics C5-C12	0.016	<0.01	0.032
Total Aromatics C6-C12	<0.01	<0.01	<0.02

Leach Test Information

2:1

8:1

Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.020	8.293
Conductivity (µS/cm)	861.00	214.00
Temperature (°C)	20.00	20.40
Volume Leachant (Litres)	0.308	1.400
Volume of Eluate VE1 (Litres)	0.262	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

08/01/2013 09:49:27

09:49:18 08/01/2013



SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.234	Moisture Content Ratio (%)	33.7
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	74.8
Particle Size <4mm	>95%		

Case SDG121217-21 Lab Sample Number(s)6675504 Sampled Date12-Dec-2012 Customer Sample Ref.BH 104 Depth (m)3.50		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)		-	-	-
Loss on Ignition (%)		-	-	-
Sum of BTEX (mg/kg)		-	-	-
Sum of 7 PCBs (mg/kg)		-	-	-
Mineral Oil (mg/kg)		-	-	-
PAH Sum of 17 (mg/kg)		-	-	-
pH (pH Units)		-	-	-
ANC to pH 6 (mol/kg)		-	-	-
ANC to pH 4 (mol/kg)		-	-	-

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
Arsenic	0.0045	0.00121	0.00901	0.017	0.5	2	25
Barium	0.0725	0.106	0.145	1.01	20	100	300
Cadmium	<0.0001	<0.0001	<0.0002	<0.001	0.04	1	5
Chromium	0.00147	0.00097	0.00293	0.0104	0.5	10	70
Copper	0.00138	0.00155	0.00276	0.0153	2	50	100
Mercury Dissolved (CVAf)	-	-	-	-	0.01	0.2	2
Molybdenum	0.0741	0.0107	0.148	0.201	0.5	10	30
Nickel	0.00398	0.00462	0.00795	0.0452	0.4	10	40
Lead	0.000146	0.000039	0.000292	0.000549	0.5	10	50
Antimony	0.00479	0.0033	0.00959	0.0352	0.06	0.7	5
Selenium	0.00158	0.000496	0.00316	0.00657	0.1	0.5	7
Zinc	0.00617	0.00483	0.0123	0.0503	4	50	200
Chloride	27	<2	54	40.1	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	102	258	205	2350	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	-	-	-	-	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.167	7.774
Conductivity (µS/cm)	534.00	648.00
Temperature (°C)	20.00	20.80
Volume Leachant (Litres)	0.291	1.400
Volume of Eluate VE1 (Litres)	0.242	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27



SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.234	Moisture Content Ratio (%)	33.7
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	74.8
Particle Size <4mm	>95%		

<div>Case</div> <div>SDG121217-21</div> <div>Lab Sample Number(s)6675504</div> <div>Sampled Date12-Dec-2012</div> <div>Customer Sample Ref.BH 104</div> <div>Depth (m)3.50</div> <div>Solid Waste Analysis</div> <div>Total Organic Carbon (%) -</div> <div>Loss on Ignition (%) -</div> <div>Sum of BTEX (mg/kg) -</div> <div>Sum of 7 PCBs (mg/kg) -</div> <div>Mineral Oil (mg/kg) -</div> <div>PAH Sum of 17 (mg/kg) -</div> <div>pH (pH Units) -</div> <div>ANC to pH 6 (mol/kg) -</div> <div>ANC to pH 4 (mol/kg) -</div>		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
		-	-	-
		-	-	-
		-	-	-
		-	-	-
		-	-	-
		-	-	-
		-	-	-
		-	-	-

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
Mercury Unfiltered	<0.00002	<0.00002	<0.00004	<0.0002	-	-	-
Total Ammonia as NH3	12.4	5.94	24.7	69	-	-	-
Phenol by HPLC (W)	<0.0025	<0.0005	<0.005	<0.00797	-	-	-
Total Ammonium as NH4	13.1	6.29	26.2	73	-	-	-
Total Cyanide (W)	0.15	<0.05	0.3	<0.5	-	-	-
Cresols by HPLC (W)	0.0252	<0.0005	0.0504	0.0375	-	-	-
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	-	-	-
Nitrate as N	<0.0677	<0.0677	<0.135	<0.677	-	-	-
Xylenols by HPLC (W)	0.122	<0.0005	0.243	0.181	-	-	-
Napthol by HPLC (W)	<0.0025	<0.0005	<0.005	<0.00797	-	-	-
2,3,5 Trimethyl-Phenol by HPLC (W)	0.0198	<0.0005	0.0396	0.0294	-	-	-
Boron	0.308	0.097	0.617	1.28	-	-	-
Total Alkalinity Filtered as CaCO3	150	105	300	1120	-	-	-
Phenols Total of 5 Speciated by HPLC (W)	0.197	<0.00064	0.394	0.293	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.0002	<0.001	-	-	-
Acenaphthene by GCMS	0	<0.000015	0.000114	<0.00015	-	-	-
Acenaphthylene by GCMS	<0.000011	<0.000011	<0.000022	<0.00011	-	-	-
Fluoranthene by GCMS	0	0.000105	0.000102	0.00097	-	-	-
Anthracene by GCMS	0	0.000059	0.00004	0.000532	-	-	-
Phenanthrene by GCMS	<0.000022	0.000112	<0.000044	0.000954	-	-	-
Fluorene by GCMS	0	0.0000171	0.0000848	0.000209	-	-	-
Chrysene by GCMS	<0.000013	0.0000202	<0.000026	0.000172	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.167	7.774
Conductivity (µS/cm)	534.00	648.00
Temperature (°C)	20.00	20.80
Volume Leachant (Litres)	0.291	1.400
Volume of Eluate VE1 (Litres)	0.242	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27



CERTIFICATE OF ANALYSIS

SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.234	Moisture Content Ratio (%)	33.7
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	74.8
Particle Size <4mm	>95%		

Case		Landfill Waste Acceptance Criteria Limits		
SDG	121217-21	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Lab Sample Number(s)	6675504			
Sampled Date	12-Dec-2012			
Customer Sample Ref.	BH 104			
Depth (m)	3.50			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
PAH Spec MS - Aqueous (W)							
Pyrene by GCMS	0	0.000109	0.0000676	0.000978	-	-	-
Benz(a)anthracene by GCMS	<0.000017	<0.000017	<0.000034	<0.00017	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000023	<0.000023	<0.000046	<0.00023	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000027	<0.000027	<0.000054	<0.00027	-	-	-
Benzo(a)pyrene by GCMS	<0.000009	<0.000009	<0.000018	<0.00009	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Benzo(ghi)perylene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000014	<0.000014	<0.000028	<0.00014	-	-	-
PAH 16 EPA Total by GCMS	<0.000247	0.000422	<0.000494	0.00359	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	-	-	-	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.006	<0.03	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics & Aromatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.167	7.774
Conductivity (µS/cm)	534.00	648.00
Temperature (°C)	20.00	20.80
Volume Leachant (Litres)	0.291	1.400
Volume of Eluate VE1 (Litres)	0.242	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27

09:49:18 08/01/2013



SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.234	Moisture Content Ratio (%)	33.7
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	74.8
Particle Size <4mm	>95%		

<div>Case</div> <div>SDG121217-21</div> <div>Lab Sample Number(s)6675504</div> <div>Sampled Date12-Dec-2012</div> <div>Customer Sample Ref.BH 104</div> <div>Depth (m)3.50</div> <div>Solid Waste Analysis</div> <div>Total Organic Carbon (%) -</div> <div>Loss on Ignition (%) -</div> <div>Sum of BTEX (mg/kg) -</div> <div>Sum of 7 PCBs (mg/kg) -</div> <div>Mineral Oil (mg/kg) -</div> <div>PAH Sum of 17 (mg/kg) -</div> <div>pH (pH Units) -</div> <div>ANC to pH 6 (mol/kg) -</div> <div>ANC to pH 4 (mol/kg) -</div>		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
		-	-	-
		-	-	-
		-	-	-
		-	-	-
		-	-	-
		-	-	-
		-	-	-
		-	-	-

Eluate Analysis	C2	Conc ⁿ in 2:1 eluate	C8	Conc ⁿ in 8:1 eluate	A2	2:1 conc ⁿ leached	A2-10	Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l			mg/kg							
TPH CWG (W)											
Benzene by GC		<0.007		<0.007		<0.014		<0.07	-	-	-
Toluene by GC		<0.004		<0.004		<0.008		<0.04	-	-	-
Ethylbenzene by GC		<0.005		<0.005		<0.01		<0.05	-	-	-
m & p Xylene by GC		<0.008		<0.008		<0.016		<0.08	-	-	-
o Xylene by GC		<0.003		<0.003		<0.006		<0.03	-	-	-
Sum m&p and o Xylene by GC		<0.011		<0.011		<0.022		<0.11	-	-	-
Sum of BTEX by GC		<0.028		<0.028		<0.056		<0.28	-	-	-
Aromatics >EC8 -EC10		<0.01		<0.01		<0.02		<0.1	-	-	-
Aromatics >EC10-EC12		<0.01		<0.01		<0.02		<0.1	-	-	-
Aromatics >EC12-EC16		<0.01		<0.01		<0.02		<0.1	-	-	-
Aromatics >EC16-EC21		<0.01		<0.01		<0.02		<0.1	-	-	-
Aromatics >EC21-EC35		<0.01		<0.01		<0.02		<0.1	-	-	-
Total Aromatics >EC12-EC35		<0.01		<0.01		<0.02		<0.1	-	-	-
Total Aliphatics >C5-C35 Aqueous		<0.01		<0.01		-		-	-	-	-
Total Aromatics >C6-C35 Aqueous		<0.01		<0.01		-		-	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35		<0.01		<0.01		-		-	-	-	-
Total Aliphatics C5-C12		<0.01		<0.01		<0.02		<0.1	-	-	-
Total Aromatics C6-C12		<0.01		<0.01		<0.02		<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.167	7.774
Conductivity (µS/cm)	534.00	648.00
Temperature (°C)	20.00	20.80
Volume Leachant (Litres)	0.291	1.400
Volume of Eluate VE1 (Litres)	0.242	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27



SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.247	Moisture Content Ratio (%)	40.9
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	71
Particle Size <4mm	>95%		

<div>Case</div> <div>SDG121217-21</div> <div>Lab Sample Number(s)6675505</div> <div>Sampled Date12-Dec-2012</div> <div>Customer Sample Ref.BH 104</div> <div>Depth (m)4.80</div> <div>Solid Waste Analysis</div> <div>Total Organic Carbon (%) -</div> <div>Loss on Ignition (%) -</div> <div>Sum of BTEX (mg/kg) -</div> <div>Sum of 7 PCBs (mg/kg) -</div> <div>Mineral Oil (mg/kg) -</div> <div>PAH Sum of 17 (mg/kg) -</div> <div>pH (pH Units) -</div> <div>ANC to pH 6 (mol/kg) -</div> <div>ANC to pH 4 (mol/kg) -</div>		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill

Eluate Analysis	C ₂ Conc ⁿ in 2:1 eluate	C ₈ Conc ⁿ in 8:1 eluate	A ₂ 2:1 conc ⁿ leached	A ₂₋₁₀ Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
Arsenic	0.000737	0.000197	0.00147	0.00259	0.5	2	25
Barium	0.0133	0.00789	0.0265	0.0851	20	100	300
Cadmium	<0.0001	<0.0001	<0.0002	<0.001	0.04	1	5
Chromium	0.000811	0.000864	0.00162	0.00858	0.5	10	70
Copper	0.00162	0.00114	0.00324	0.012	2	50	100
Mercury Dissolved (CVAf)	-	-	-	-	0.01	0.2	2
Molybdenum	0.000869	0.000915	0.00174	0.00909	0.5	10	30
Nickel	0.00207	0.000623	0.00413	0.00789	0.4	10	40
Lead	0.00807	0.000092	0.0161	0.0101	0.5	10	50
Antimony	0.000198	<0.00016	0.000396	<0.0016	0.06	0.7	5
Selenium	0.00148	<0.00039	0.00295	<0.0039	0.1	0.5	7
Zinc	0.00118	0.000547	0.00236	0.0062	4	50	200
Chloride	36.2	3.1	72.3	69.2	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	142	19.9	284	340	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	-	-	-	-	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.161	8.146
Conductivity (µS/cm)	522.00	121.30
Temperature (°C)	20.20	20.40
Volume Leachant (Litres)	0.278	1.400
Volume of Eluate VE1 (Litres)	0.202	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27



CERTIFICATE OF ANALYSIS

SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg) 0.247

Mass of dry sample (kg) 0.175

Particle Size <4mm >95%

Site Location

Medina

Moisture Content Ratio (%) 40.9

Dry Matter Content Ratio (%) 71

Case

SDG 121217-21

Lab Sample Number(s) 6675505

Sampled Date 12-Dec-2012

Customer Sample Ref. BH 104

Depth (m) 4.80

Landfill Waste Acceptance
Criteria LimitsInert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Solid Waste Analysis

Total Organic Carbon (%) -

Loss on Ignition (%) -

Sum of BTEX (mg/kg) -

Sum of 7 PCBs (mg/kg) -

Mineral Oil (mg/kg) -

PAH Sum of 17 (mg/kg) -

pH (pH Units) -

ANC to pH 6 (mol/kg) -

ANC to pH 4 (mol/kg) -

Eluate Analysis

Eluate Analysis	C2	Conc ⁿ in 2:1 eluate	C8	Conc ⁿ in 8:1 eluate	A2	2:1 conc ⁿ leached	A2-10	Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	mg/l			mg/kg					
Mercury Unfiltered	<0.00002	<0.00002	<0.00002	<0.00002	<0.00004	<0.00002	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<0.2	<0.2	<0.4	<2	-	-	-
Phenol by HPLC (W)	<0.0005	<0.0005	<0.0005	<0.0005	<0.000999	<0.005	-	-	-
Total Ammonium as NH4	<0.3	<0.3	<0.3	<0.3	<0.599	<3	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.05	<0.05	<0.0999	<0.5	-	-	-
Cresols by HPLC (W)	<0.0005	0.00051	<0.00051	<0.00051	<0.000999	<0.005	-	-	-
Beryllium	<0.00007	<0.00007	<0.00007	<0.00007	<0.00014	<0.0007	-	-	-
Nitrate as N	<0.0677	0.116	<0.116	<0.116	<0.135	1.03	-	-	-
Xylenols by HPLC (W)	0.0132	<0.0005	<0.0005	<0.0005	0.0263	0.0152	-	-	-
Napthol by HPLC (W)	<0.0005	0.00075	<0.00075	<0.00075	<0.000999	0.00663	-	-	-
2,3,5 Trimethyl-Phenol by HPLC (W)	0.00185	<0.0005	<0.0005	<0.0005	0.0037	<0.005	-	-	-
Boron	0.013	<0.0094	<0.0094	<0.0094	0.026	<0.094	-	-	-
Total Alkalinity Filtered as CaCO3	105	50	50	50	210	563	-	-	-
Phenols Total of 5 Speciated by HPLC (W)	0.0204	0.00146	0.00146	0.00146	0.0407	0.0364	-	-	-
PAH Spec MS - Aqueous (W)									
Naphthalene by GCMS	0	<0.0001	<0.0001	<0.0001	0.000204	<0.001	-	-	-
Acenaphthene by GCMS	<0.000015	0.0000449	0.0000449	0.0000449	<0.00003	0.000397	-	-	-
Acenaphthylene by GCMS	<0.000011	<0.000011	<0.000011	<0.000011	<0.000022	<0.00011	-	-	-
Fluoranthene by GCMS	<0.000017	0.0000502	0.0000502	0.0000502	<0.000034	0.000444	-	-	-
Anthracene by GCMS	<0.000015	<0.000015	<0.000015	<0.000015	<0.00003	<0.00015	-	-	-
Phenanthrene by GCMS	<0.000022	0.0000333	0.0000333	0.0000333	<0.0000439	0.000295	-	-	-
Fluorene by GCMS	<0.000014	0.0000179	0.0000179	0.0000179	<0.000028	0.000158	-	-	-
Chrysene by GCMS	<0.000013	0.0000204	0.0000204	0.0000204	<0.000026	0.00018	-	-	-

Leach Test Information

	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.161	8.146
Conductivity (µS/cm)	522.00	121.30
Temperature (°C)	20.20	20.40
Volume Leachant (Litres)	0.278	1.400
Volume of Eluate VE1 (Litres)	0.202	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

08/01/2013 09:49:27

09:49:18 08/01/2013



CERTIFICATE OF ANALYSIS

SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg) 0.247

Mass of dry sample (kg) 0.175

Particle Size <4mm >95%

Site Location

Medina

Moisture Content Ratio (%) 40.9

Dry Matter Content Ratio (%) 71

Case

SDG 121217-21

Lab Sample Number(s) 6675505

Sampled Date 12-Dec-2012

Customer Sample Ref. BH 104

Depth (m) 4.80

Landfill Waste Acceptance
Criteria LimitsInert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Solid Waste Analysis

Total Organic Carbon (%) -

Loss on Ignition (%) -

Sum of BTEX (mg/kg) -

Sum of 7 PCBs (mg/kg) -

Mineral Oil (mg/kg) -

PAH Sum of 17 (mg/kg) -

pH (pH Units) -

ANC to pH 6 (mol/kg) -

ANC to pH 4 (mol/kg) -

Eluate Analysis

C₂Concⁿ in 2:1
eluateC₈Concⁿ in 8:1
eluateA₂2:1 concⁿ
leachedA₂₋₁₀Cumulative
concⁿ
leachedLimit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

PAH Spec MS - Aqueous (W)

Pyrene by GCMS	<0.000015	0.0000473	<0.00003	0.000418	-	-	-
Benz(a)anthracene by GCMS	<0.000017	0.0000179	<0.000034	<0.00017	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000023	<0.000023	<0.0000459	<0.00023	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000027	<0.000027	<0.0000539	<0.00027	-	-	-
Benzo(a)pyrene by GCMS	<0.000009	<0.000009	<0.000018	<0.00009	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Benzo(ghi)perylene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000014	<0.000014	<0.000028	<0.00014	-	-	-
PAH 16 EPA Total by GCMS	<0.000247	<0.000247	<0.000493	<0.00247	-	-	-

TPH CWG (W)

Surrogate Recovery	-	-	-	-	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.00599	<0.03	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics & Aromatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information

2:1

8:1

Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.161	8.146
Conductivity (µS/cm)	522.00	121.30
Temperature (°C)	20.20	20.40
Volume Leachant (Litres)	0.278	1.400
Volume of Eluate VE1 (Litres)	0.202	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

08/01/2013 09:49:27

09:49:18 08/01/2013



SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.247	Moisture Content Ratio (%)	40.9
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	71
Particle Size <4mm	>95%		

<div>Case</div> <div>SDG121217-21</div> <div>Lab Sample Number(s)6675505</div> <div>Sampled Date12-Dec-2012</div> <div>Customer Sample Ref.BH 104</div> <div>Depth (m)4.80</div> <div>Solid Waste Analysis</div> <div>Total Organic Carbon (%) -</div> <div>Loss on Ignition (%) -</div> <div>Sum of BTEX (mg/kg) -</div> <div>Sum of 7 PCBs (mg/kg) -</div> <div>Mineral Oil (mg/kg) -</div> <div>PAH Sum of 17 (mg/kg) -</div> <div>pH (pH Units) -</div> <div>ANC to pH 6 (mol/kg) -</div> <div>ANC to pH 4 (mol/kg) -</div>		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
TPH CWG (W)							
Benzene by GC	<0.007	<0.007	<0.014	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.00799	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.00999	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.016	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.00599	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.022	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.0559	<0.28	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics >C5-C35 Aqueous	<0.01	<0.01	-	-	-	-	-
Total Aromatics >C6-C35 Aqueous	<0.01	<0.01	-	-	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	-	-	-	-	-
Total Aliphatics C5-C12	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aromatics C6-C12	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.161	8.146
Conductivity (µS/cm)	522.00	121.30
Temperature (°C)	20.20	20.40
Volume Leachant (Litres)	0.278	1.400
Volume of Eluate VE1 (Litres)	0.202	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27



CERTIFICATE OF ANALYSIS

SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.213	Moisture Content Ratio (%)	21.9
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	82
Particle Size <4mm	>95%		

Case		Landfill Waste Acceptance Criteria Limits			
SDG	121217-21		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Lab Sample Number(s)	6675507				
Sampled Date	12-Dec-2012				
Customer Sample Ref.	BH 104				
Depth (m)	2.50				
Solid Waste Analysis					
Total Organic Carbon (%)	-	-	-	-	-
Loss on Ignition (%)	-	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-	-
pH (pH Units)	-	-	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 2:1 eluate	C ₈ Conc ⁿ in 8:1 eluate	A ₂ 2:1 conc ⁿ leached	A ₂₋₁₀ Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
Arsenic	0.00682	0.00115	0.0137	0.0173	0.5	2	25
Barium	0.251	0.0439	0.502	0.652	20	100	300
Cadmium	0.000156	<0.0001	0.000312	<0.001	0.04	1	5
Chromium	0.00345	0.00144	0.00691	0.0165	0.5	10	70
Copper	0.003	0.00219	0.00601	0.0227	2	50	100
Mercury Dissolved (CVAf)	-	-	-	-	0.01	0.2	2
Molybdenum	0.0653	0.00763	0.131	0.136	0.5	10	30
Nickel	0.00831	0.00136	0.0166	0.0207	0.4	10	40
Lead	0.000244	0.000491	0.000489	0.00466	0.5	10	50
Antimony	0.012	0.00486	0.024	0.0559	0.06	0.7	5
Selenium	0.00186	0.000429	0.00373	0.00577	0.1	0.5	7
Zinc	0.00307	0.00619	0.00615	0.0587	4	50	200
Chloride	5.9	<2	11.8	<20	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	216	52.4	433	692	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	-	-	-	-	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	21-Dec-2012
pH (pH Units)	8.107	7.945
Conductivity (µS/cm)	782.00	175.50
Temperature (°C)	20.20	20.50
Volume Leachant (Litres)	0.312	1.400
Volume of Eluate VE1 (Litres)	0.140	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27



CERTIFICATE OF ANALYSIS

SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.213	Moisture Content Ratio (%)	21.9
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	82
Particle Size <4mm	>95%		

Case	Landfill Waste Acceptance Criteria Limits		
SDG	121217-21		
Lab Sample Number(s)	6675507		
Sampled Date	12-Dec-2012		
Customer Sample Ref.	BH 104		
Depth (m)	2.50		
Solid Waste Analysis			
Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	C ₂	C ₈	A ₂	A ₂₋₁₀	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
Mercury Unfiltered	0.0000806	-	0.000161	-	-	-	-
Total Ammonia as NH ₃	12.3	0.607	24.7	18.1	-	-	-
Phenol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Total Ammonium as NH ₄	13.1	0.643	26.3	19.3	-	-	-
Total Cyanide (W)	<0.05	-	<0.1	-	-	-	-
Cresols by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	-	-	-
Nitrate as N	<0.0677	0.0991	<0.136	0.889	-	-	-
Xylenols by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Napthol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
2,3,5 Trimethyl-Phenol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Boron	0.271	0.0181	0.542	0.441	-	-	-
Total Alkalinity Filtered as CaCO ₃	190	-	380	-	-	-	-
Phenols Total of 5 Speciated by HPLC (W)	<0.00064	<0.00064	<0.00128	<0.0064	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.0002	<0.001	-	-	-
Acenaphthene by GCMS	0	0.0000635	0.0000559	0.000606	-	-	-
Acenaphthylene by GCMS	<0.000011	<0.000011	<0.000022	<0.00011	-	-	-
Fluoranthene by GCMS	0	0.0000651	0.000107	0.000641	-	-	-
Anthracene by GCMS	<0.000015	<0.000015	<0.00003	<0.00015	-	-	-
Phenanthrene by GCMS	<0.000022	0.000034	<0.000044	0.000313	-	-	-
Fluorene by GCMS	<0.000014	0.0000152	<0.000028	0.00014	-	-	-
Chrysene by GCMS	<0.000013	<0.000013	<0.000026	<0.00013	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	21-Dec-2012
pH (pH Units)	8.107	7.945
Conductivity (µS/cm)	782.00	175.50
Temperature (°C)	20.20	20.50
Volume Leachant (Litres)	0.312	1.400
Volume of Eluate VE1 (Litres)	0.140	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27

09:49:18 08/01/2013



CERTIFICATE OF ANALYSIS

SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.213	Moisture Content Ratio (%)	21.9
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	82
Particle Size <4mm	>95%		

Case	Landfill Waste Acceptance Criteria Limits		
SDG	121217-21		
Lab Sample Number(s)	6675507		
Sampled Date	12-Dec-2012		
Customer Sample Ref.	BH 104		
Depth (m)	2.50		
Solid Waste Analysis	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 2:1 eluate	C ₈ Conc ⁿ in 8:1 eluate	A ₂ 2:1 conc ⁿ leached	A ₂₋₁₀ Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
PAH Spec MS - Aqueous (W)							
Pyrene by GCMS	0	0.0000579	0.000118	0.00058	-	-	-
Benz(a)anthracene by GCMS	<0.000017	<0.000017	<0.000034	<0.00017	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000023	<0.000023	<0.000046	<0.00023	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000027	<0.000027	<0.0000541	<0.00027	-	-	-
Benzo(a)pyrene by GCMS	<0.000009	<0.000009	<0.000018	<0.00009	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Benzo(ghi)perylene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000014	<0.000014	<0.000028	<0.00014	-	-	-
PAH 16 EPA Total by GCMS	<0.000247	<0.000247	<0.000495	<0.00247	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	-	-	-	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.00601	<0.03	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics & Aromatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	21-Dec-2012
pH (pH Units)	8.107	7.945
Conductivity (µS/cm)	782.00	175.50
Temperature (°C)	20.20	20.50
Volume Leachant (Litres)	0.312	1.400
Volume of Eluate VE1 (Litres)	0.140	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27

09:49:18 08/01/2013



SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.213	Moisture Content Ratio (%)	21.9
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	82
Particle Size <4mm	>95%		

Case SDG121217-21 Lab Sample Number(s)6675507 Sampled Date12-Dec-2012 Customer Sample Ref.BH 104 Depth (m)2.50		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)		-	-	-
Loss on Ignition (%)		-	-	-
Sum of BTEX (mg/kg)		-	-	-
Sum of 7 PCBs (mg/kg)		-	-	-
Mineral Oil (mg/kg)		-	-	-
PAH Sum of 17 (mg/kg)		-	-	-
pH (pH Units)		-	-	-
ANC to pH 6 (mol/kg)		-	-	-
ANC to pH 4 (mol/kg)		-	-	-

Eluate Analysis	C2	Conc ⁿ in 2:1 eluate	C8	Conc ⁿ in 8:1 eluate	A2	2:1 conc ⁿ leached	A2-10	Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	mg/l				mg/kg				
TPH CWG (W)									
Benzene by GC		<0.007		<0.007		<0.014		<0.07	- - -
Toluene by GC		<0.004		<0.004		<0.00801		<0.04	- - -
Ethylbenzene by GC		<0.005		<0.005		<0.01		<0.05	- - -
m & p Xylene by GC		<0.008		<0.008		<0.016		<0.08	- - -
o Xylene by GC		<0.003		<0.003		<0.00601		<0.03	- - -
Sum m&p and o Xylene by GC		<0.011		<0.011		<0.022		<0.11	- - -
Sum of BTEX by GC		<0.028		<0.028		<0.0561		<0.28	- - -
Aromatics >EC8 -EC10		<0.01		<0.01		<0.02		<0.1	- - -
Aromatics >EC10-EC12		<0.01		<0.01		<0.02		<0.1	- - -
Aromatics >EC12-EC16		<0.01		-		<0.02		-	- - -
Aromatics >EC16-EC21		<0.01		-		<0.02		-	- - -
Aromatics >EC21-EC35		<0.01		-		<0.02		-	- - -
Total Aromatics >EC12-EC35		<0.01		-		<0.02		-	- - -
Total Aliphatics >C5-C35 Aqueous		<0.01		<0.01		-		-	- - -
Total Aromatics >C6-C35 Aqueous		<0.01		<0.01		-		-	- - -
TPH (Total Aliphatics + Total Aromatics) >C5-C35		<0.01		<0.01		-		-	- - -
Total Aliphatics C5-C12		<0.01		<0.01		<0.02		<0.1	- - -
Total Aromatics C6-C12		<0.01		<0.01		<0.02		<0.1	- - -

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	21-Dec-2012
pH (pH Units)	8.107	7.945
Conductivity (µS/cm)	782.00	175.50
Temperature (°C)	20.20	20.50
Volume Leachant (Litres)	0.312	1.400
Volume of Eluate VE1 (Litres)	0.140	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27



SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.243	Moisture Content Ratio (%)	38.9
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	72
Particle Size <4mm	>95%		

<div>Case</div> <div>SDG121217-21</div> <div>Lab Sample Number(s)6675510</div> <div>Sampled Date12-Dec-2012</div> <div>Customer Sample Ref.BH 105</div> <div>Depth (m)3.00</div> <div>Solid Waste Analysis</div> <div>Total Organic Carbon (%) -</div> <div>Loss on Ignition (%) -</div> <div>Sum of BTEX (mg/kg) -</div> <div>Sum of 7 PCBs (mg/kg) -</div> <div>Mineral Oil (mg/kg) -</div> <div>PAH Sum of 17 (mg/kg) -</div> <div>pH (pH Units) -</div> <div>ANC to pH 6 (mol/kg) -</div> <div>ANC to pH 4 (mol/kg) -</div>		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
Arsenic	0.00201	0.000648	0.00402	0.00844	0.5	2	25
Barium	0.142	0.0729	0.284	0.829	20	100	300
Cadmium	0.000134	<0.0001	0.000268	<0.001	0.04	1	5
Chromium	0.00136	0.000851	0.00271	0.00924	0.5	10	70
Copper	0.00434	0.00145	0.00868	0.0187	2	50	100
Mercury Dissolved (CVAf)	-	-	-	-	0.01	0.2	2
Molybdenum	0.0937	0.0277	0.187	0.372	0.5	10	30
Nickel	0.00688	0.00386	0.0138	0.043	0.4	10	40
Lead	0.00005	0.000049	0.0001	0.000492	0.5	10	50
Antimony	0.00351	0.00131	0.00703	0.0163	0.06	0.7	5
Selenium	0.000897	0.000453	0.00179	0.00517	0.1	0.5	7
Zinc	0.00158	0.00106	0.00316	0.0114	4	50	200
Chloride	26.9	2	53.8	55.9	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	313	187	626	2050	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	-	-	-	-	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.020	8.272
Conductivity (µS/cm)	861.00	476.00
Temperature (°C)	20.00	20.50
Volume Leachant (Litres)	0.282	1.400
Volume of Eluate VE1 (Litres)	0.252	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27



SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.243	Moisture Content Ratio (%)	38.9
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	72
Particle Size <4mm	>95%		

Case SDG121217-21 Lab Sample Number(s)6675510 Sampled Date12-Dec-2012 Customer Sample Ref.BH 105 Depth (m)3.00		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
Mercury Unfiltered	<0.00002	<0.00002	<0.00004	<0.0002	-	-	-
Total Ammonia as NH3	6.56	0.809	13.1	16.4	-	-	-
Phenol by HPLC (W)	<0.0005	<0.001	<0.001	<0.00928	-	-	-
Total Ammonium as NH4	6.96	0.856	13.9	17.3	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.1	<0.5	-	-	-
Cresols by HPLC (W)	<0.0005	0.00332	<0.001	0.0284	-	-	-
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	-	-	-
Nitrate as N	0.122	<0.0677	0.243	<0.677	-	-	-
Xylenols by HPLC (W)	<0.0005	0.0509	<0.001	0.436	-	-	-
Napthol by HPLC (W)	<0.0005	<0.001	<0.001	<0.00928	-	-	-
2,3,5 Trimethyl-Phenol by HPLC (W)	<0.0005	0.0054	<0.001	0.0462	-	-	-
Boron	0.411	0.0844	0.823	1.31	-	-	-
Total Alkalinity Filtered as CaCO3	130	75	260	829	-	-	-
Phenols Total of 5 Speciated by HPLC (W)	<0.00064	0.0596	<0.00128	0.51	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.0002	<0.001	-	-	-
Acenaphthene by GCMS	0	0.0000387	0.0000758	0.000386	-	-	-
Acenaphthylene by GCMS	<0.000011	<0.000011	<0.000022	<0.00011	-	-	-
Fluoranthene by GCMS	0	0.000171	0.000419	0.00177	-	-	-
Anthracene by GCMS	0	0.0000193	0.000163	0.000283	-	-	-
Phenanthrene by GCMS	<0.000022	<0.000022	<0.000044	<0.00022	-	-	-
Fluorene by GCMS	0	<0.000014	0.000105	<0.00014	-	-	-
Chrysene by GCMS	0	<0.000013	0.0000756	<0.00013	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.020	8.272
Conductivity (µS/cm)	861.00	476.00
Temperature (°C)	20.00	20.50
Volume Leachant (Litres)	0.282	1.400
Volume of Eluate VE1 (Litres)	0.252	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27



CERTIFICATE OF ANALYSIS

SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.243	Moisture Content Ratio (%)	38.9
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	72
Particle Size <4mm	>95%		

Case		Landfill Waste Acceptance Criteria Limits		
SDG	121217-21	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Lab Sample Number(s)	6675510			
Sampled Date	12-Dec-2012			
Customer Sample Ref.	BH 105			
Depth (m)	3.00			

Solid Waste Analysis

Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
PAH Spec MS - Aqueous (W)							
Pyrene by GCMS	0	0.000187	0.000324	0.00183	-	-	-
Benz(a)anthracene by GCMS	0	<0.000017	0.0000594	<0.00017	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000023	<0.000023	<0.000046	<0.00023	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000027	<0.000027	<0.000054	<0.00027	-	-	-
Benzo(a)pyrene by GCMS	0	<0.000009	0.0000414	<0.00009	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Benzo(ghi)perylene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000014	<0.000014	<0.000028	<0.00014	-	-	-
PAH 16 EPA Total by GCMS	0	0.000416	0.00126	0.00447	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	-	-	-	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.006	<0.03	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics & Aromatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.020	8.272
Conductivity (µS/cm)	861.00	476.00
Temperature (°C)	20.00	20.50
Volume Leachant (Litres)	0.282	1.400
Volume of Eluate VE1 (Litres)	0.252	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27

09:49:18 08/01/2013



CERTIFICATE OF ANALYSIS

SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.243	Moisture Content Ratio (%)	38.9
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	72
Particle Size <4mm	>95%		

Case		Landfill Waste Acceptance Criteria Limits		
SDG	121217-21	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Lab Sample Number(s)	6675510			
Sampled Date	12-Dec-2012			
Customer Sample Ref.	BH 105			
Depth (m)	3.00			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	C2 Conc ⁿ in 2:1 eluate	C8 Conc ⁿ in 8:1 eluate	A2 2:1 conc ⁿ leached	A2-10 Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
TPH CWG (W)							
Benzene by GC	<0.007	<0.007	<0.014	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.008	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.01	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.016	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.006	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.022	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.056	<0.28	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics >C5-C35 Aqueous	<0.01	<0.01	-	-	-	-	-
Total Aromatics >C6-C35 Aqueous	<0.01	<0.01	-	-	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	-	-	-	-	-
Total Aliphatics C5-C12	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aromatics C6-C12	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	19-Dec-2012	20-Dec-2012
pH (pH Units)	8.020	8.272
Conductivity (µS/cm)	861.00	476.00
Temperature (°C)	20.00	20.50
Volume Leachant (Litres)	0.282	1.400
Volume of Eluate VE1 (Litres)	0.252	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
08/01/2013 09:49:27

09:49:18 08/01/2013



SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

Notification of NDPs (No determination possible)

Date Received : 17/12/2012 09:14:31

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
6675501	BH 105	4.50	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
6675502	BH 103	3.00 - 7.50	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
6675503	BH 103	0.50 - 3.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
6675504	BH 104	3.50	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
6675505	BH 104	4.80	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
6675507	BH 104	2.50	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
6675508	BH 103	0.50	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
6675510	BH 105	3.00	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos



SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
PM114		Leaching Procedure for CEN Two Stage BatchTest 2:1/8:1 Cumulative		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM243		Mixed Anions In Soils By Kone		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		
TM321		Organic matter Content of Soil By Titration		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



CERTIFICATE OF ANALYSIS

SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Test Completion Dates

Lab Sample No(s)	6675502	6675503	6675508	6675500	6675504	6675505	6675507	6675501	6675509	6675510
Customer Sample Ref.	BH 103	BH 103	BH 103	BH 104	BH 104	BH 104	BH 104	BH 105	BH 105	BH 105
AGS Ref.										
Depth	3.00 - 7.50	0.50 - 3.00	0.50	0.50	3.50	4.80	2.50	4.50	0.50	3.00
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Alkalinity Filtered as CaCO3	03-Jan-2013	03-Jan-2013			03-Jan-2013	03-Jan-2013	03-Jan-2013	03-Jan-2013		03-Jan-2013
Ammoniacal Nitrogen	03-Jan-2013	03-Jan-2013			03-Jan-2013	03-Jan-2013	03-Jan-2013	03-Jan-2013		03-Jan-2013
Ammonium Soil by Titration			02-Jan-2013	02-Jan-2013					02-Jan-2013	
Anions by Kone (soil)			27-Dec-2012	28-Dec-2012					27-Dec-2012	
Anions by Kone (w)	03-Jan-2013	03-Jan-2013			03-Jan-2013	03-Jan-2013	04-Jan-2013	04-Jan-2013		03-Jan-2013
Asbestos Identification (Soil)			28-Dec-2012	28-Dec-2012					28-Dec-2012	
Boron Water Soluble			28-Dec-2012	29-Dec-2012					28-Dec-2012	
CEN 2:1 Leachate (2 Stage)	19-Dec-2012	19-Dec-2012			19-Dec-2012	19-Dec-2012	20-Dec-2012	19-Dec-2012		19-Dec-2012
CEN 2:1 Readings	21-Dec-2012	21-Dec-2012			21-Dec-2012	21-Dec-2012	27-Dec-2012	21-Dec-2012		21-Dec-2012
CEN 8:1 Leachate (2 Stage)	21-Dec-2012	21-Dec-2012			21-Dec-2012	21-Dec-2012	27-Dec-2012	21-Dec-2012		21-Dec-2012
CEN 8:1 Readings	02-Jan-2013	02-Jan-2013			07-Jan-2013	02-Jan-2013	02-Jan-2013	02-Jan-2013		02-Jan-2013
Cyanide Comp/Free/Total/Thiocyanate	03-Jan-2013	03-Jan-2013	27-Dec-2012	28-Dec-2012	03-Jan-2013	03-Jan-2013	03-Jan-2013	03-Jan-2013	27-Dec-2012	03-Jan-2013
Dissolved Metals by ICP-MS	03-Jan-2013	03-Jan-2013			03-Jan-2013	03-Jan-2013	04-Jan-2013	04-Jan-2013		03-Jan-2013
EPH CWG (Aliphatic) Aqueous GC (W)	04-Jan-2013	04-Jan-2013			04-Jan-2013	04-Jan-2013	04-Jan-2013	04-Jan-2013		04-Jan-2013
EPH CWG (Aliphatic) GC (S)			28-Dec-2012	03-Jan-2013					28-Dec-2012	
EPH CWG (Aromatic) Aqueous GC (W)	04-Jan-2013	04-Jan-2013			04-Jan-2013	04-Jan-2013	04-Jan-2013	04-Jan-2013		04-Jan-2013
EPH CWG (Aromatic) GC (S)			28-Dec-2012	03-Jan-2013					28-Dec-2012	
GRO by GC-FID (S)			30-Dec-2012	28-Dec-2012					28-Dec-2012	
GRO by GC-FID (W)	02-Jan-2013	29-Dec-2012			29-Dec-2012	29-Dec-2012	02-Jan-2013	29-Dec-2012		02-Jan-2013
Low Level Phenols by HPLC (W)	07-Jan-2013	07-Jan-2013			08-Jan-2013	07-Jan-2013	07-Jan-2013	07-Jan-2013		08-Jan-2013
Mercury Unfiltered	04-Jan-2013	04-Jan-2013			04-Jan-2013	04-Jan-2013	04-Jan-2013	04-Jan-2013		04-Jan-2013
Metals by iCap-OES (Soil)			28-Dec-2012	29-Dec-2012					28-Dec-2012	
Nitrite by Kone (w)	03-Jan-2013	03-Jan-2013			03-Jan-2013	03-Jan-2013	03-Jan-2013	03-Jan-2013		03-Jan-2013
PAH by GCMS			02-Jan-2013	03-Jan-2013					02-Jan-2013	
PAH Spec MS - Aqueous (W)	03-Jan-2013	03-Jan-2013			03-Jan-2013	03-Jan-2013	04-Jan-2013	03-Jan-2013		03-Jan-2013
pH			28-Dec-2012	28-Dec-2012					28-Dec-2012	
pH Value	02-Jan-2013	02-Jan-2013			02-Jan-2013	02-Jan-2013	03-Jan-2013	02-Jan-2013		02-Jan-2013
Phenols by HPLC (S)			03-Jan-2013	03-Jan-2013					02-Jan-2013	
Sample description	21-Dec-2012	21-Dec-2012	21-Dec-2012	27-Dec-2012	21-Dec-2012	21-Dec-2012	21-Dec-2012	20-Dec-2012	21-Dec-2012	21-Dec-2012
Total Organic Carbon				02-Jan-2013					02-Jan-2013	
Total Organic Carbon (Asb)			02-Jan-2013							
TPH CWG (W)	20-Dec-2012	20-Dec-2012			20-Dec-2012	20-Dec-2012	21-Dec-2012	20-Dec-2012		20-Dec-2012
TPH CWG GC (S)			30-Dec-2012	03-Jan-2013					28-Dec-2012	



SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

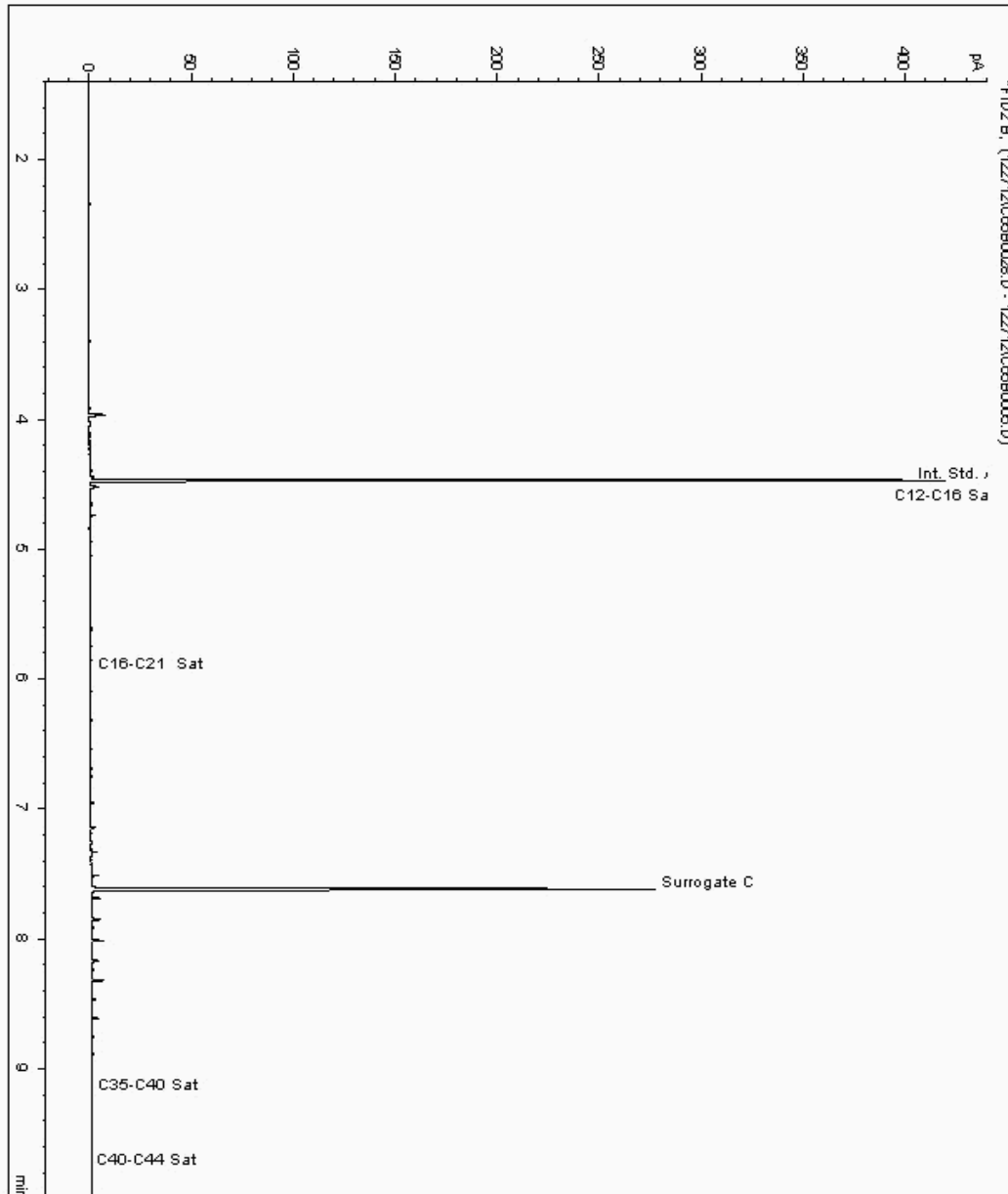
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 6713514
Sample ID : BH 103

Depth : 0.50

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6447788-6713514
Date Acquired : 27/12/12 23:33:16 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.040





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

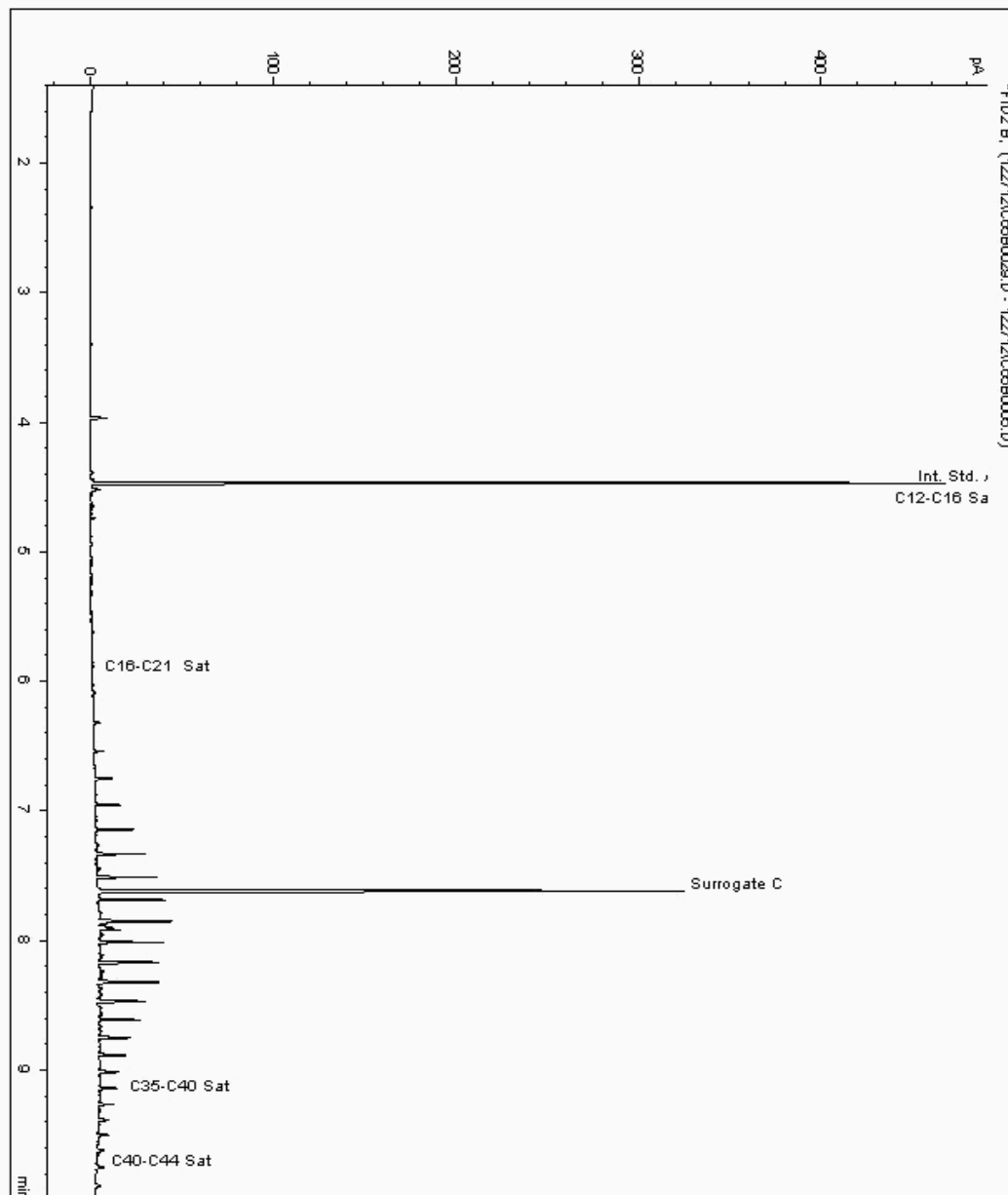
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 6713574
Sample ID : BH 105

Depth : 0.50

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6447812-6713574
Date Acquired : 27/12/12 23:54:10 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.010





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

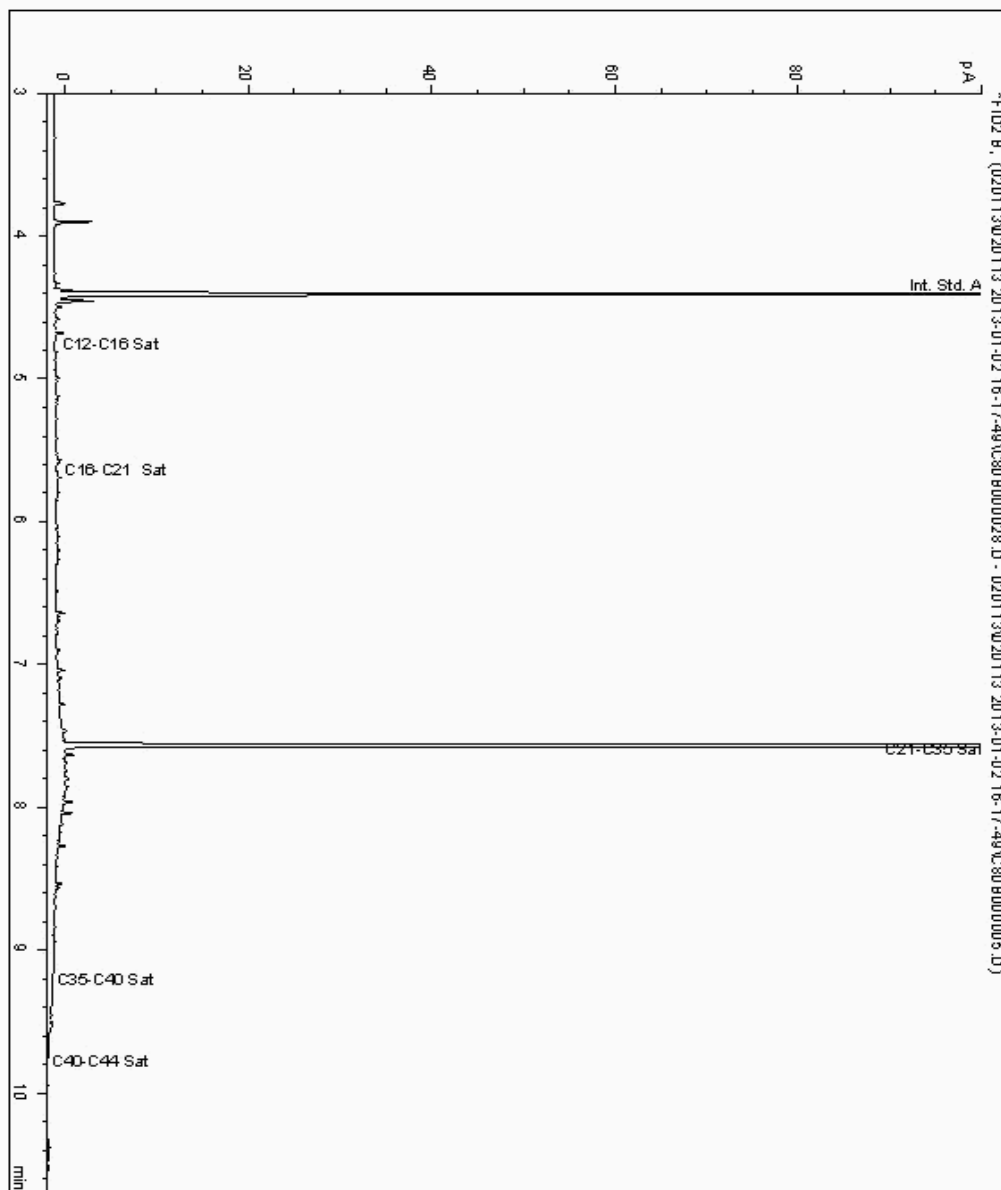
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 6718437
Sample ID : BH 104

Depth : 0.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6447544-6718437
Date Acquired : 03/01/13 00:54:20
Units : ppb
Dilution :
CF : 1
Multiplier : 1.010





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

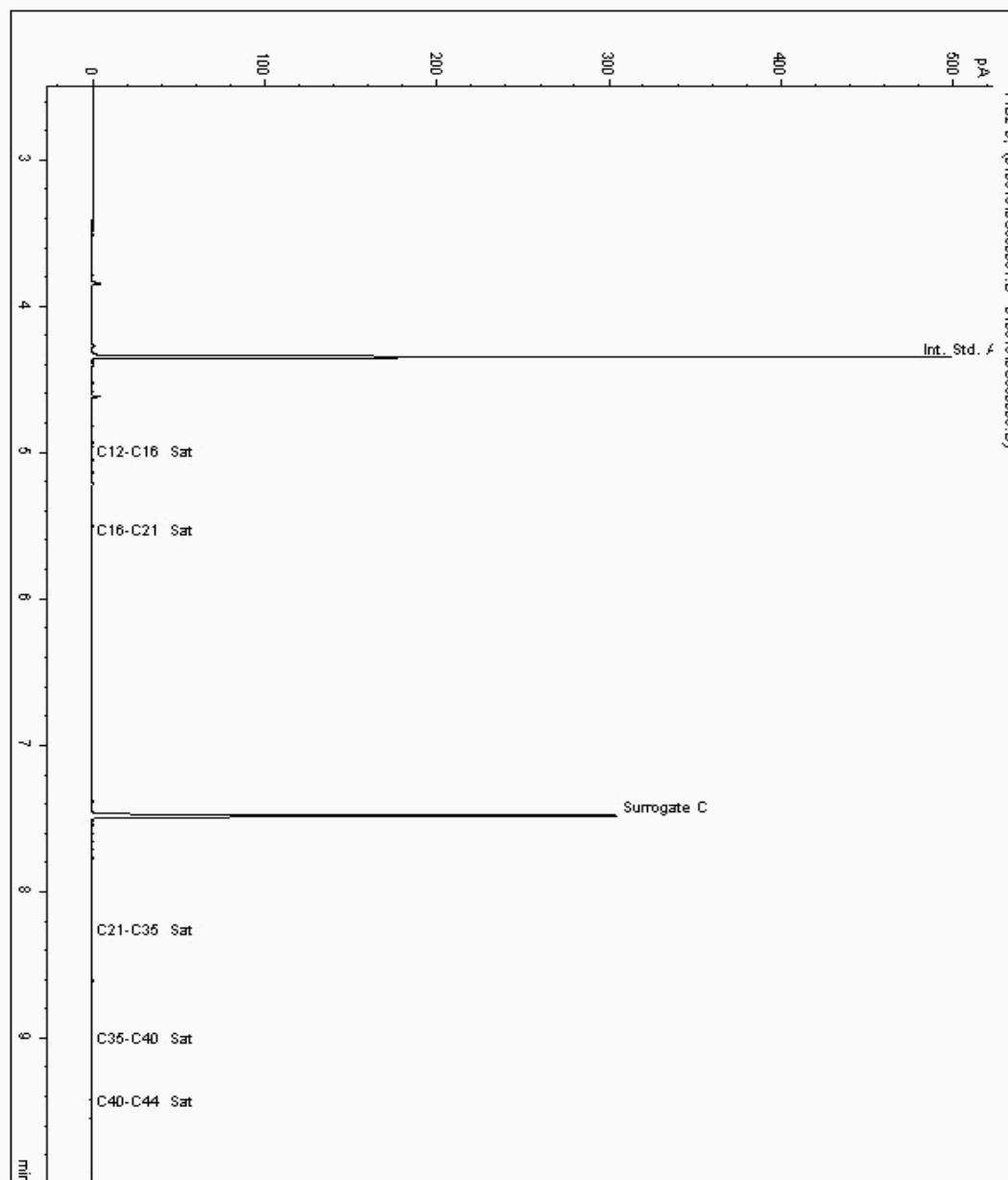
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6704814
Sample ID : BH 104

Depth : 4.80

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6451216-6704814
Date Acquired : 04/01/13 01:18:10 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

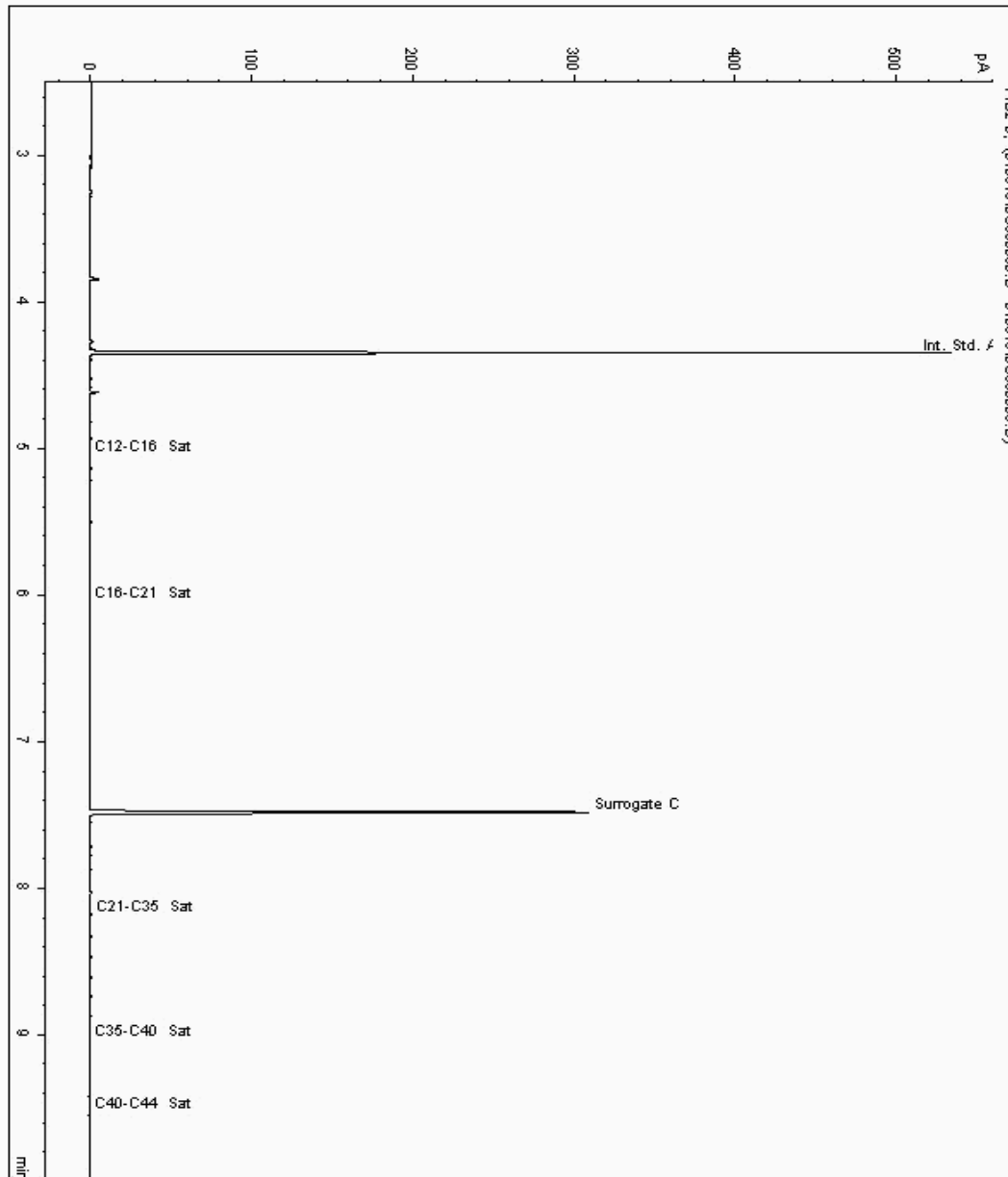
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6704975
Sample ID : BH 103

Depth : 3.00 - 7.50

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6451174-6704975
Date Acquired : 04/01/13 00:59:30 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

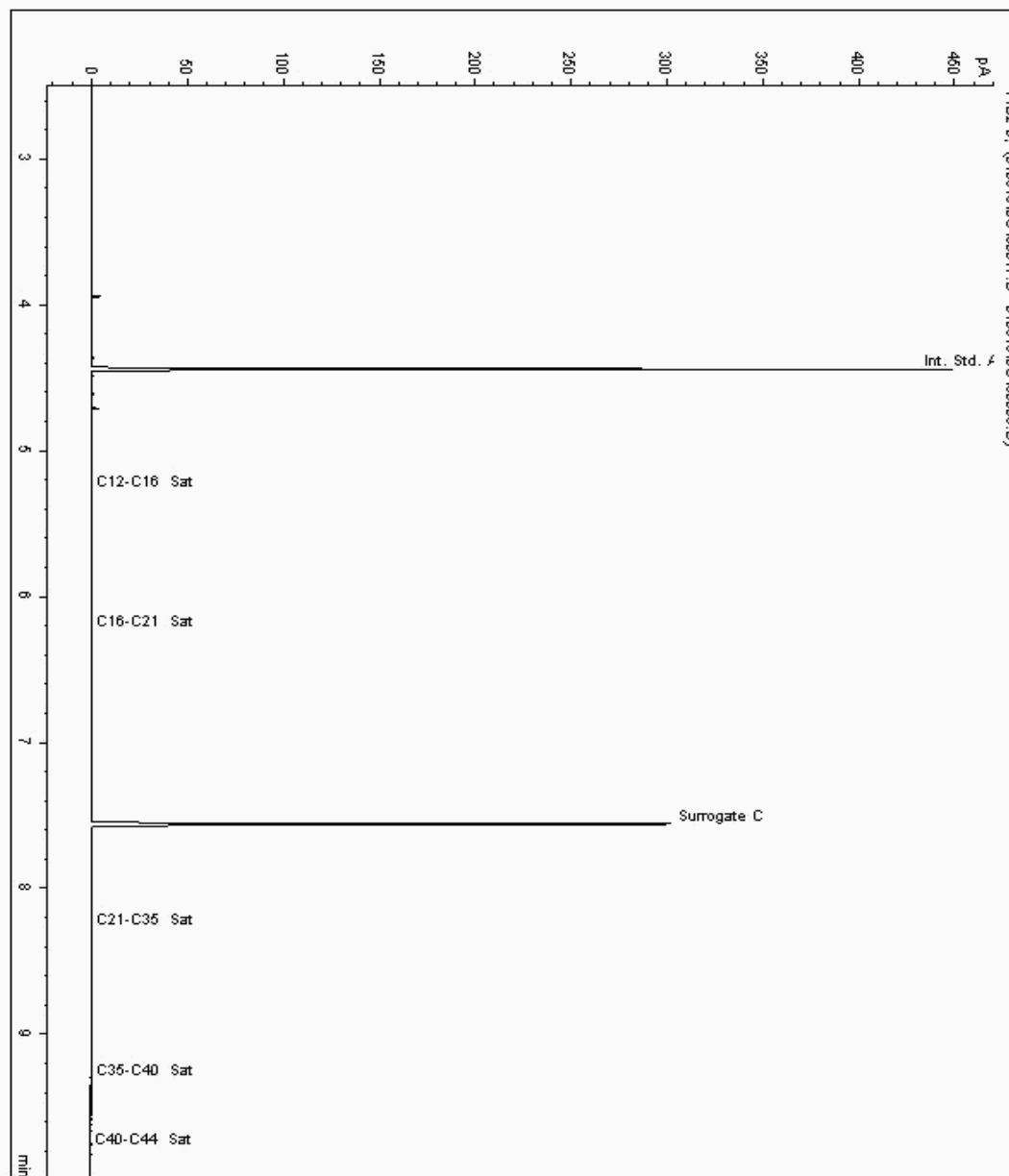
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6705053
Sample ID : BH 103

Depth : 0.50 - 3.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6452158-6705053
Date Acquired : 03/01/2013 21:52:23 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

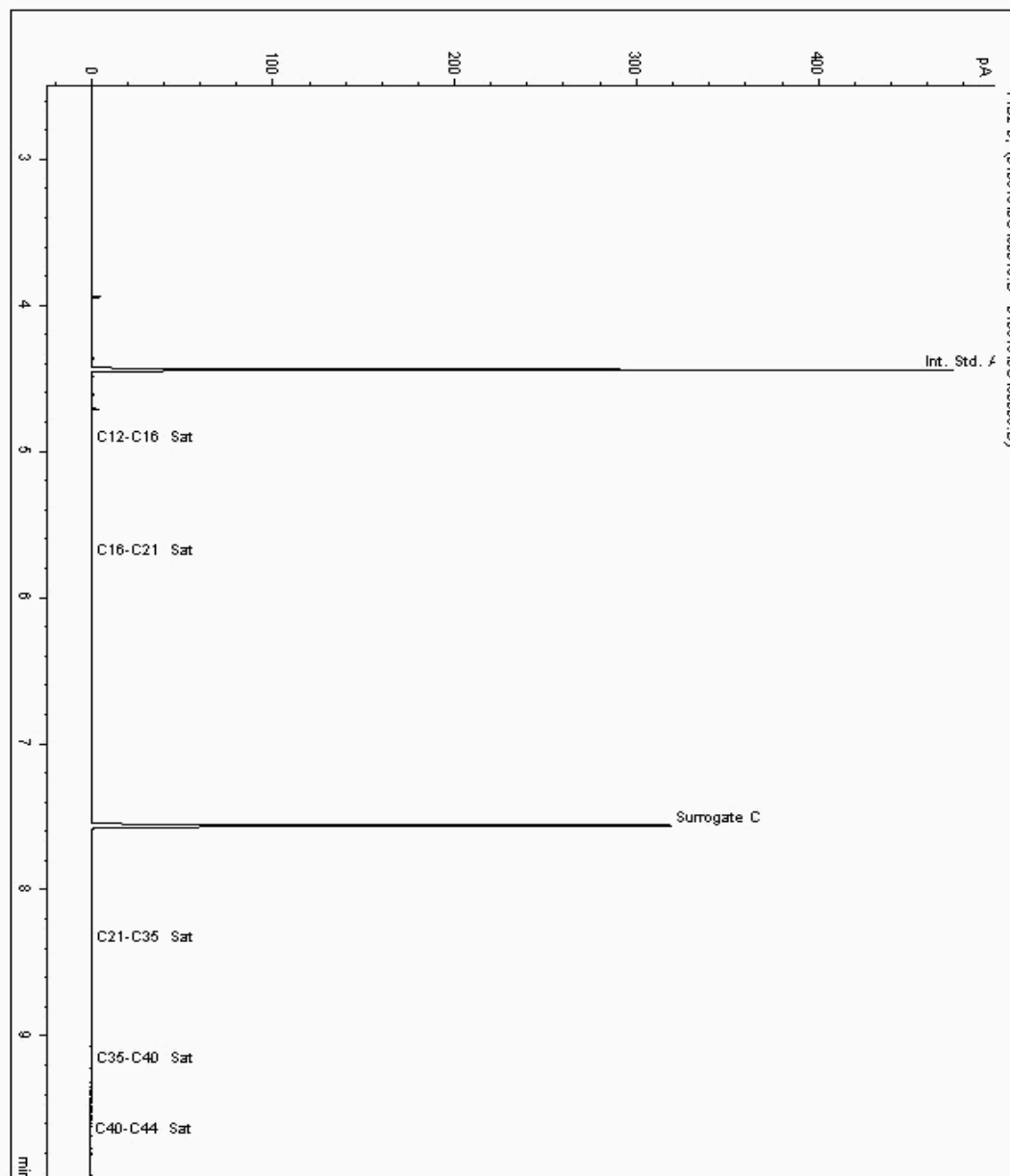
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6705101
Sample ID : BH 104

Depth : 3.50

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6451188-6705101
Date Acquired : 03/01/2013 21:33:19 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

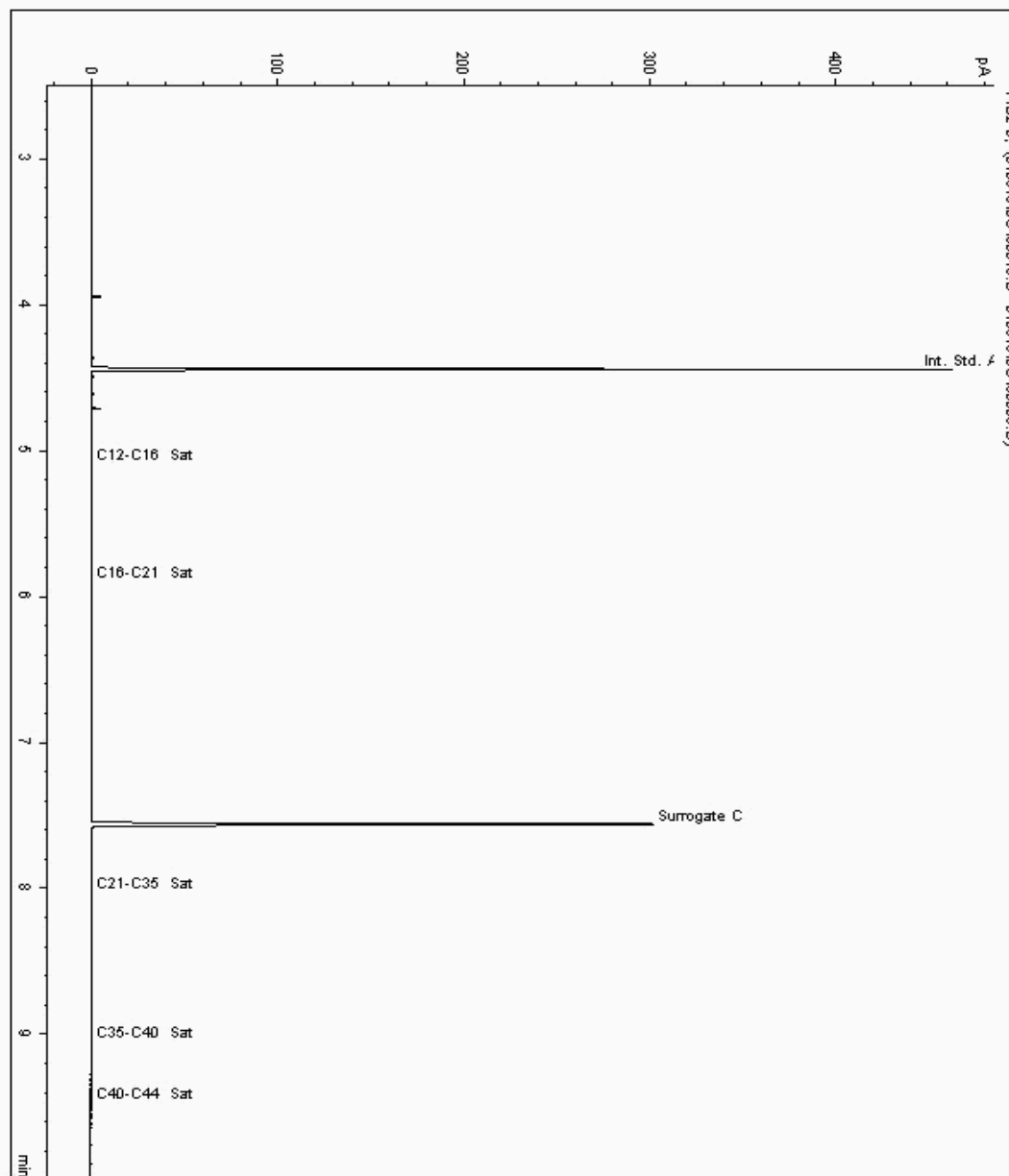
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6705115
Sample ID : BH 105

Depth : 3.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6451157-6705115
Date Acquired : 03/01/2013 21:14:04 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





CERTIFICATE OF ANALYSIS

SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

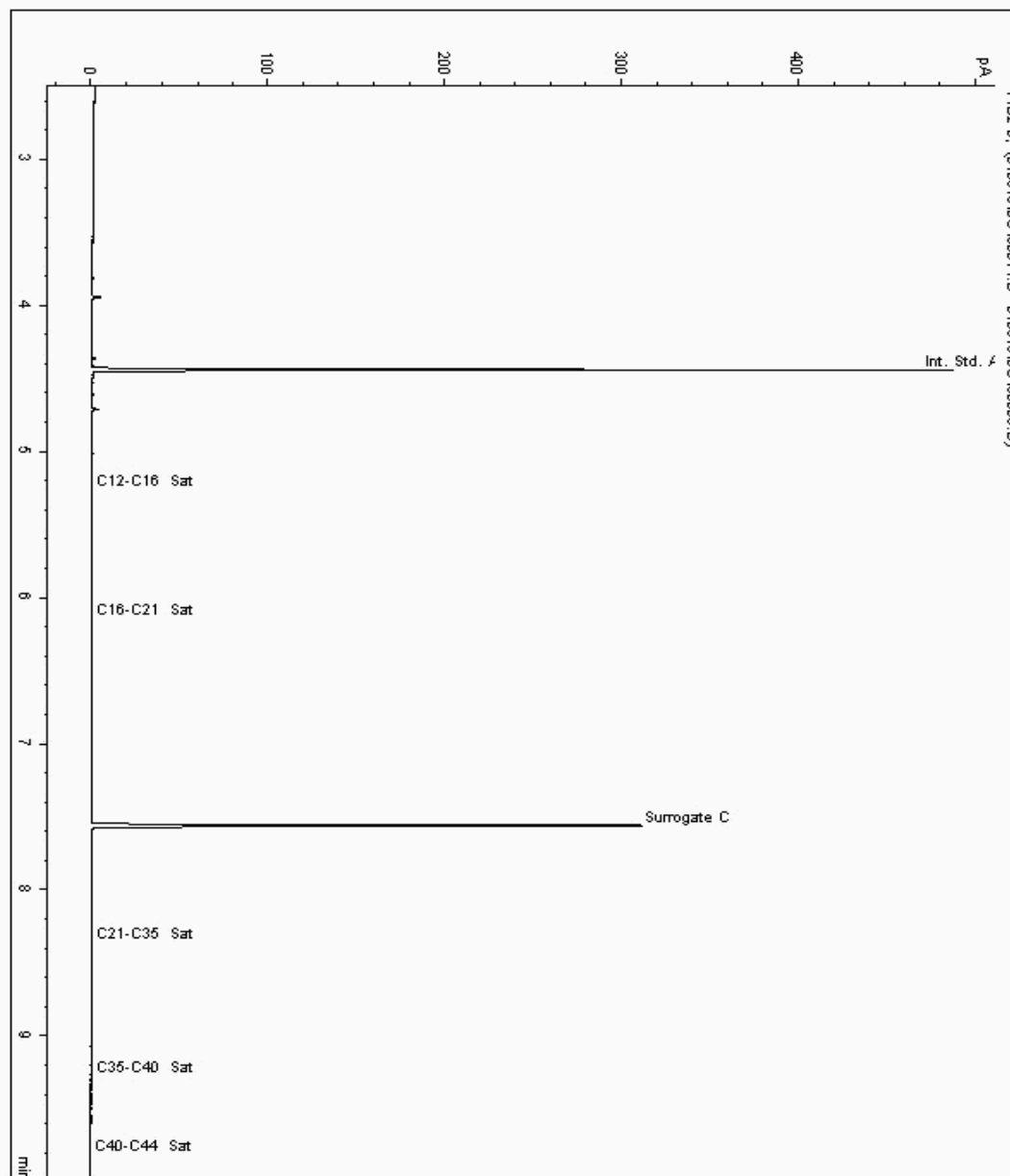
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6705138
Sample ID : BH 105

Depth : 4.50

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6451202-6705138
Date Acquired : 03/01/2013 20:55:05 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.009





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

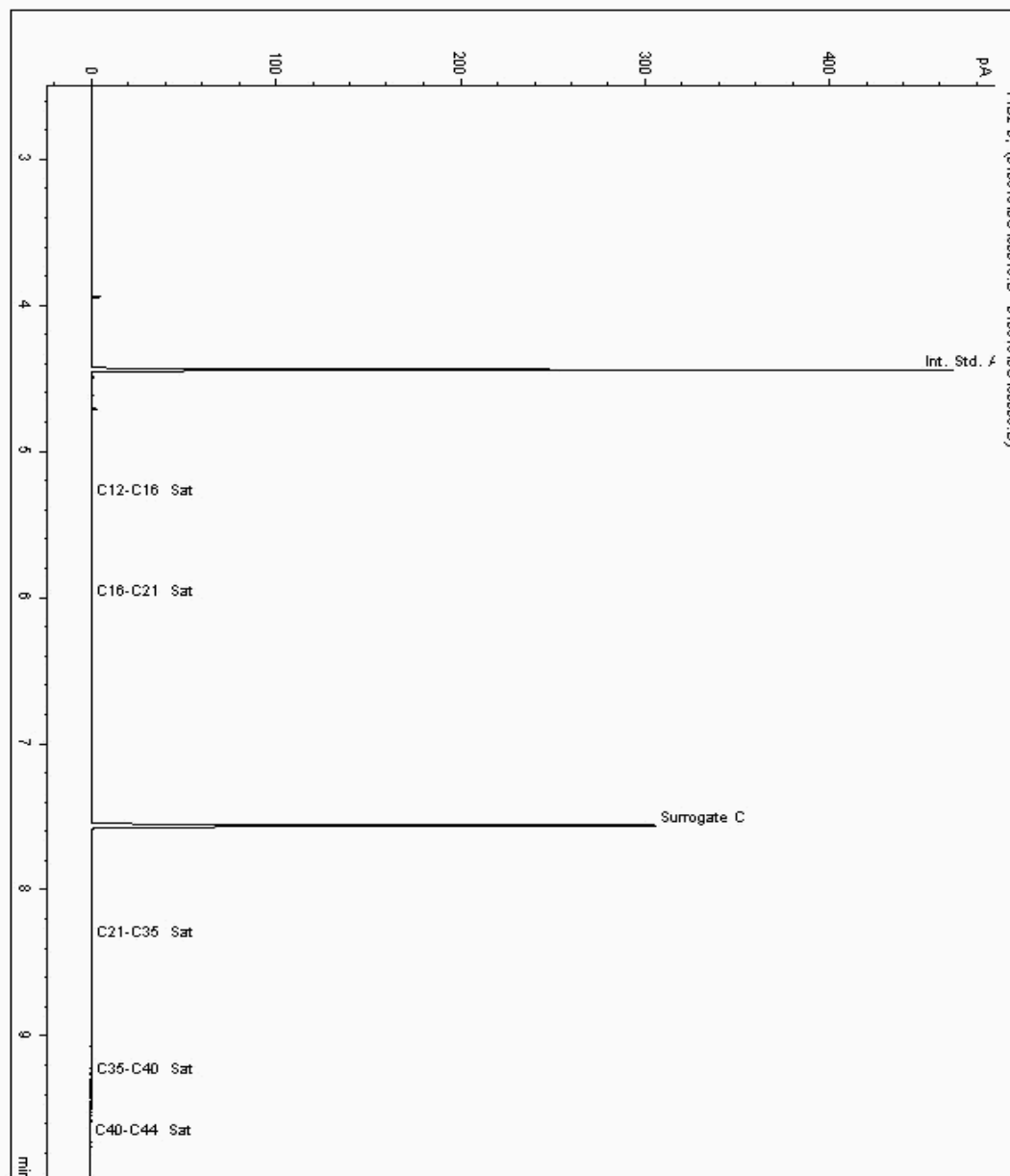
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6721640
Sample ID : BH 104

Depth : 3.50

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6464443-6721640
Date Acquired : 03/01/2013 20:36:04 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

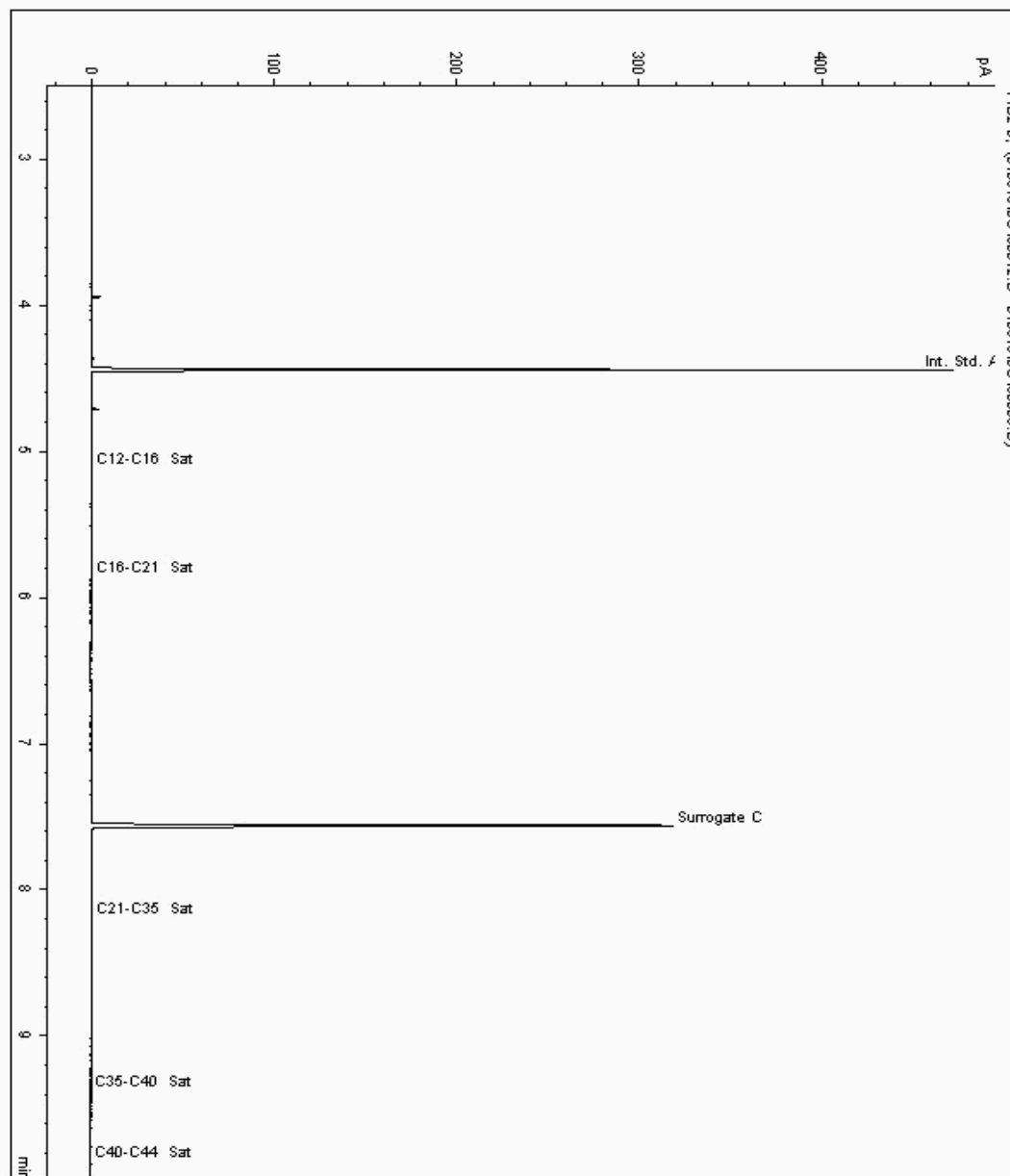
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6721643
Sample ID : BH 105

Depth : 4.50

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6464472-6721643
Date Acquired : 03/01/2013 20:17:03 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

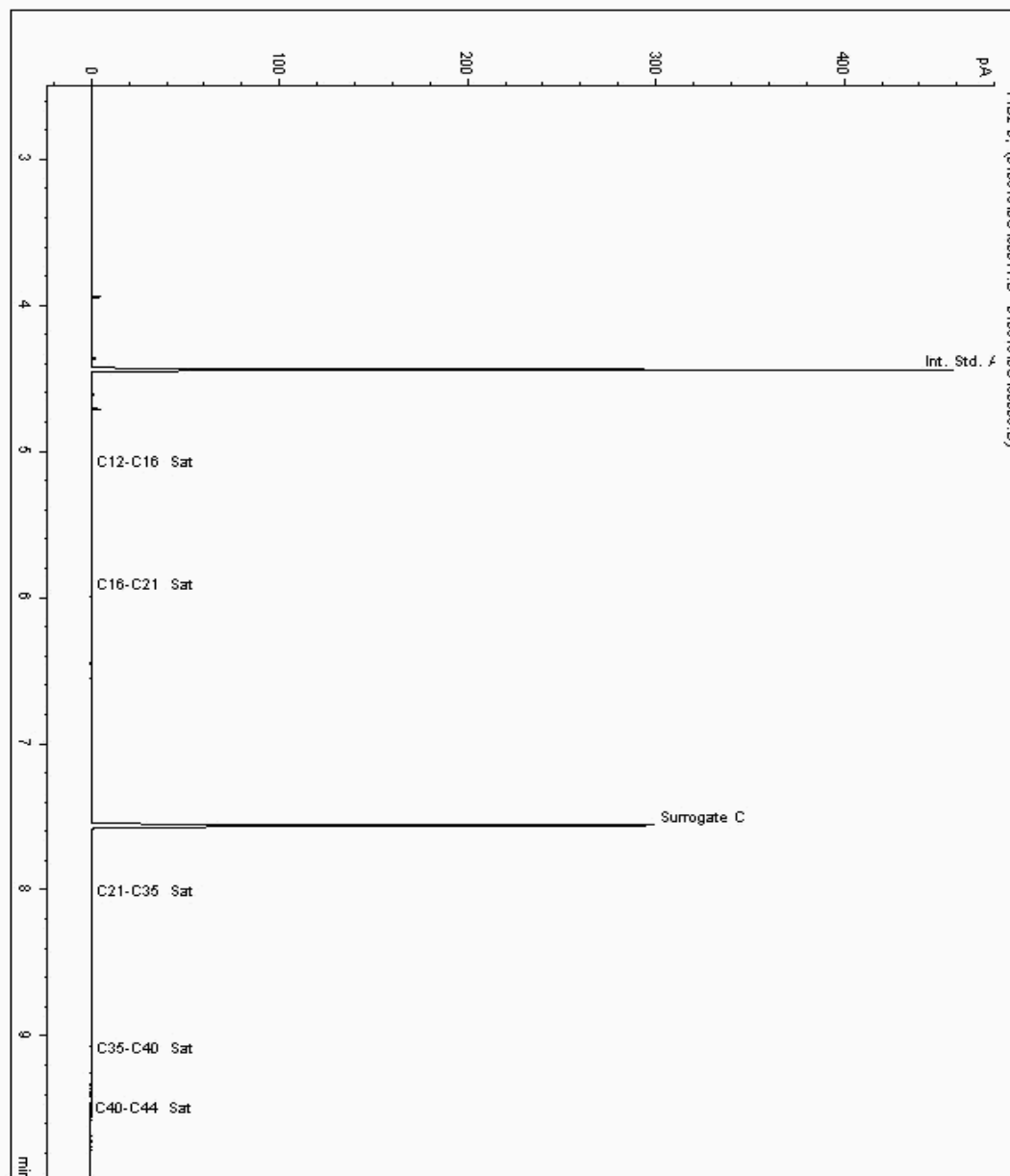
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6721648
Sample ID : BH 105

Depth : 3.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6464386-6721648
Date Acquired : 03/01/2013 19:58:06 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

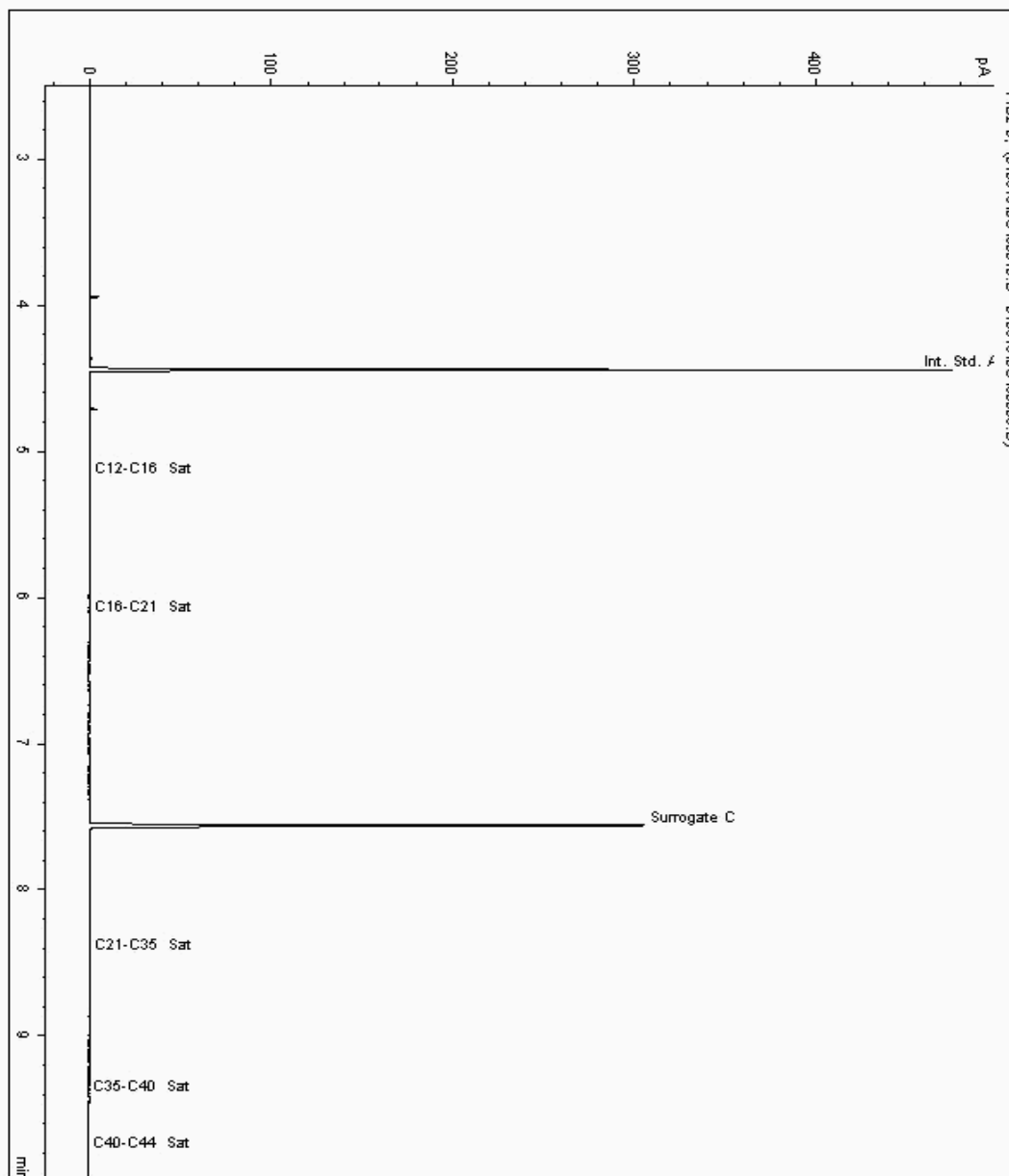
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6721654
Sample ID : BH 104

Depth : 4.80

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6464503-6721654
Date Acquired : 03/01/2013 19:39:11 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.010





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

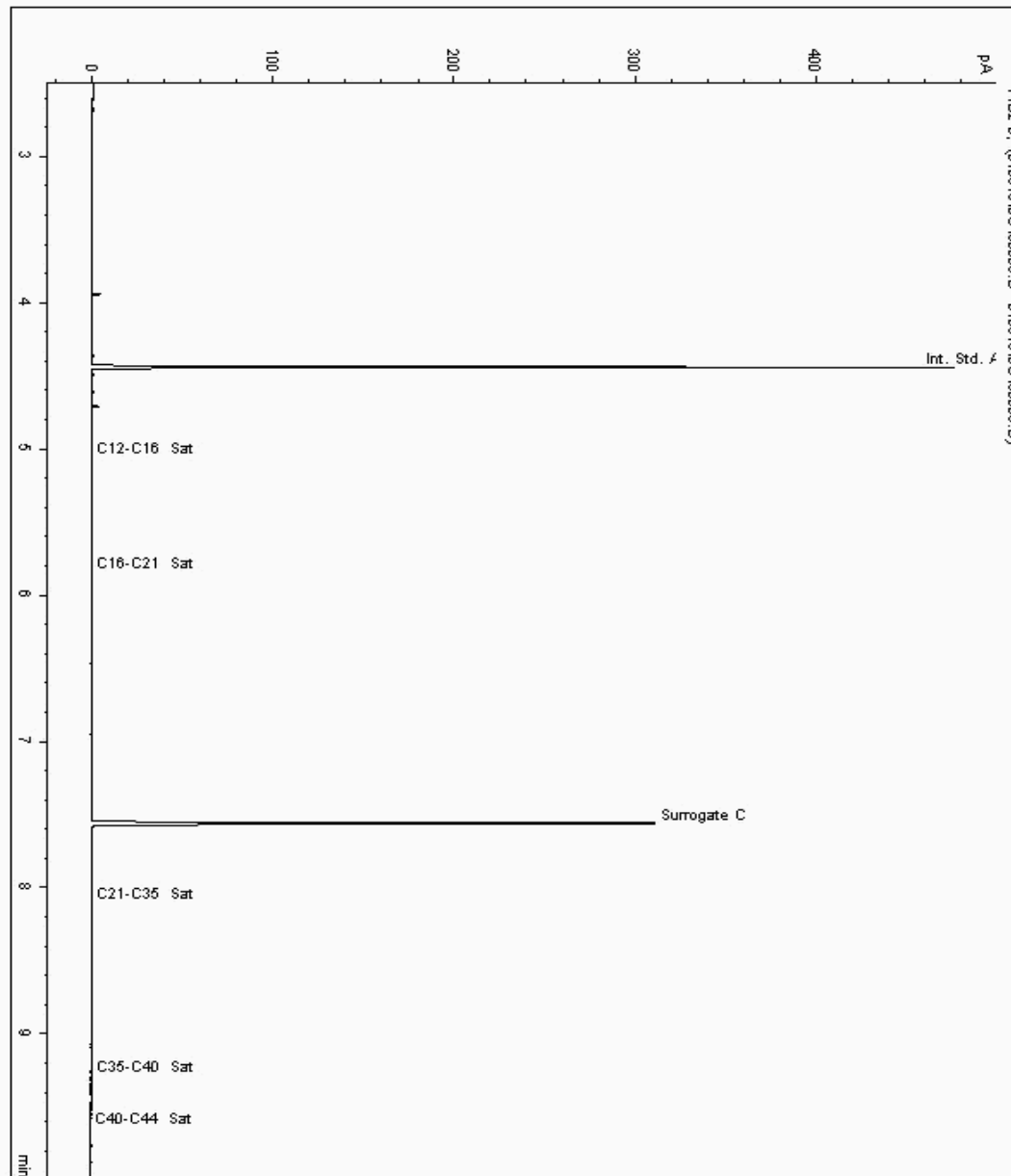
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6721664
Sample ID : BH 103

Depth : 0.50 - 3.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6464530-6721664
Date Acquired : 03/01/2013 19:20:16 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

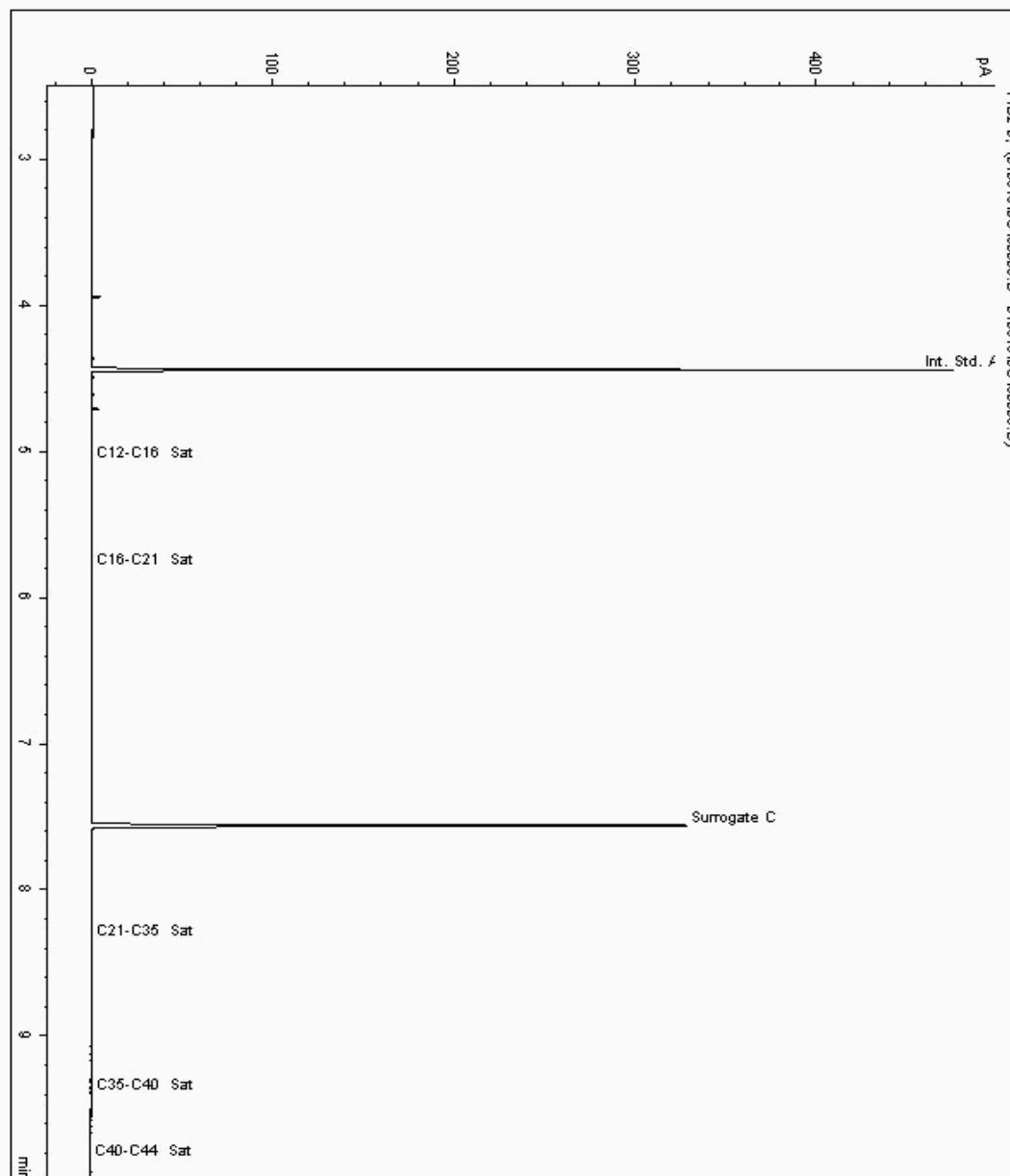
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6721669
Sample ID : BH 103

Depth : 3.00 - 7.50

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6464415-6721669
Date Acquired : 03/01/2013 19:01:10 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

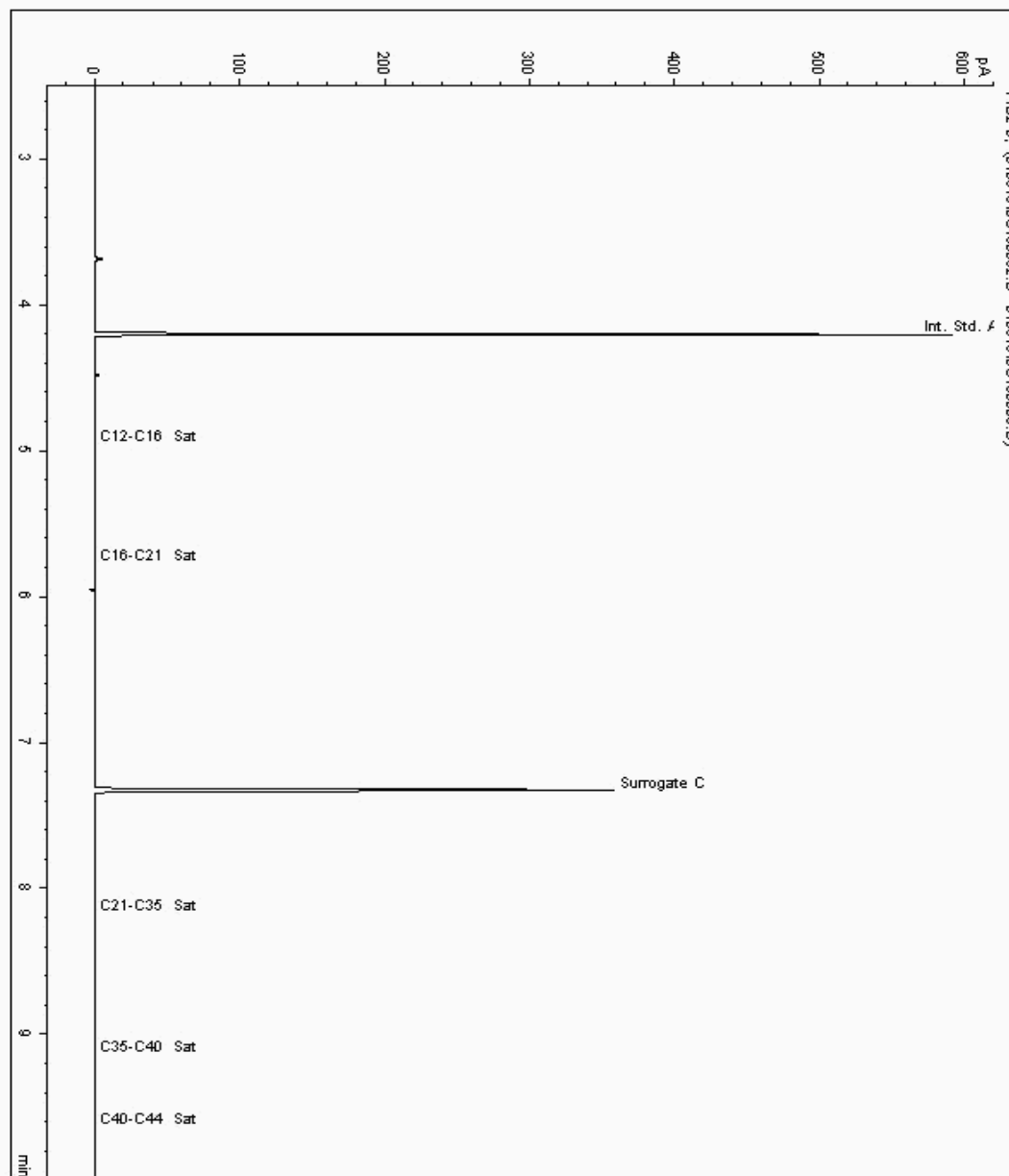
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6732037
Sample ID : BH 104

Depth : 2.50

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6451136-6732037
Date Acquired : 04/01/2013 15:11:44 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

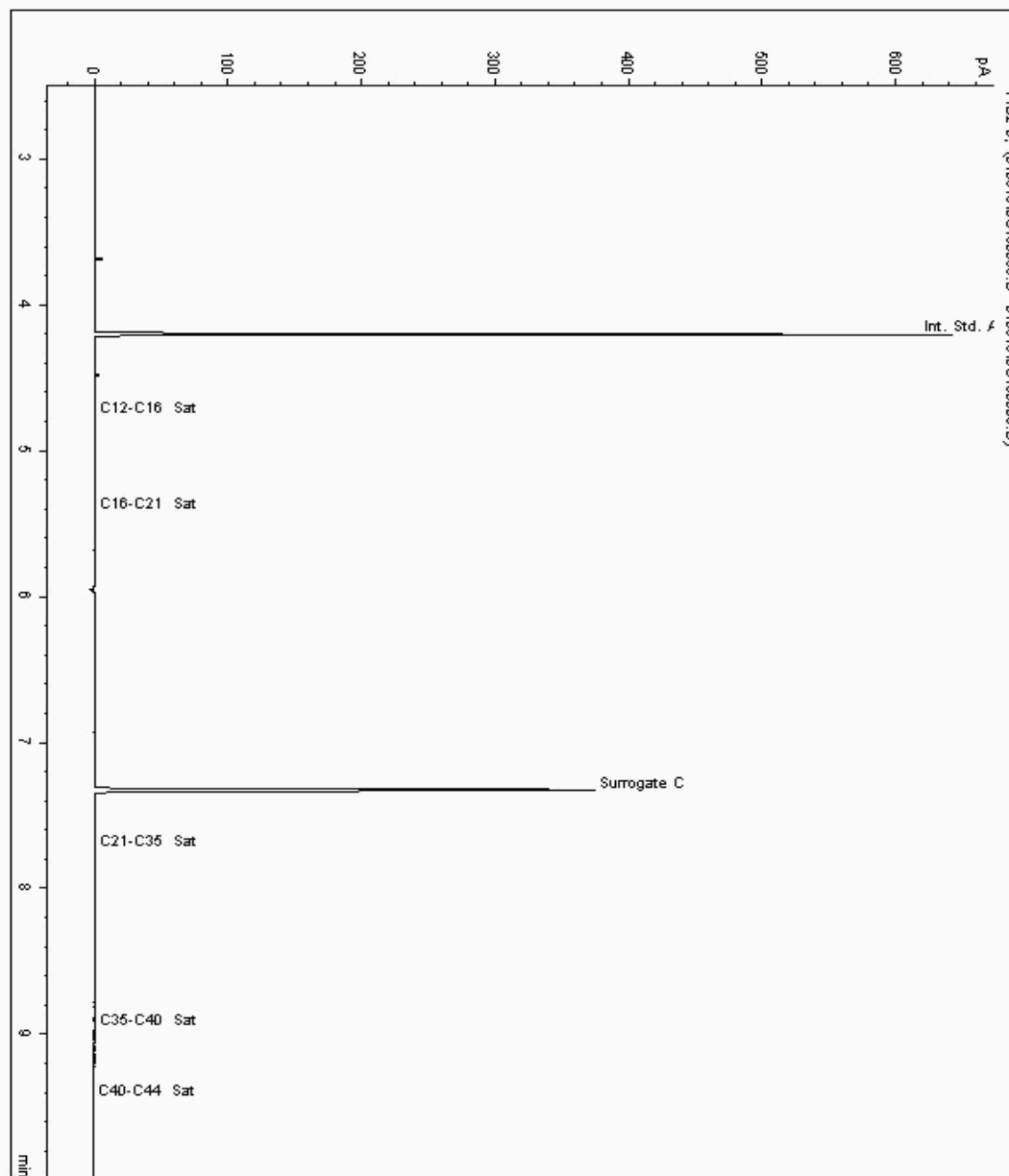
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6732054
Sample ID : BH 104

Depth : 2.50

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6472233-6732054
Date Acquired : 04/01/2013 15:30:24 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

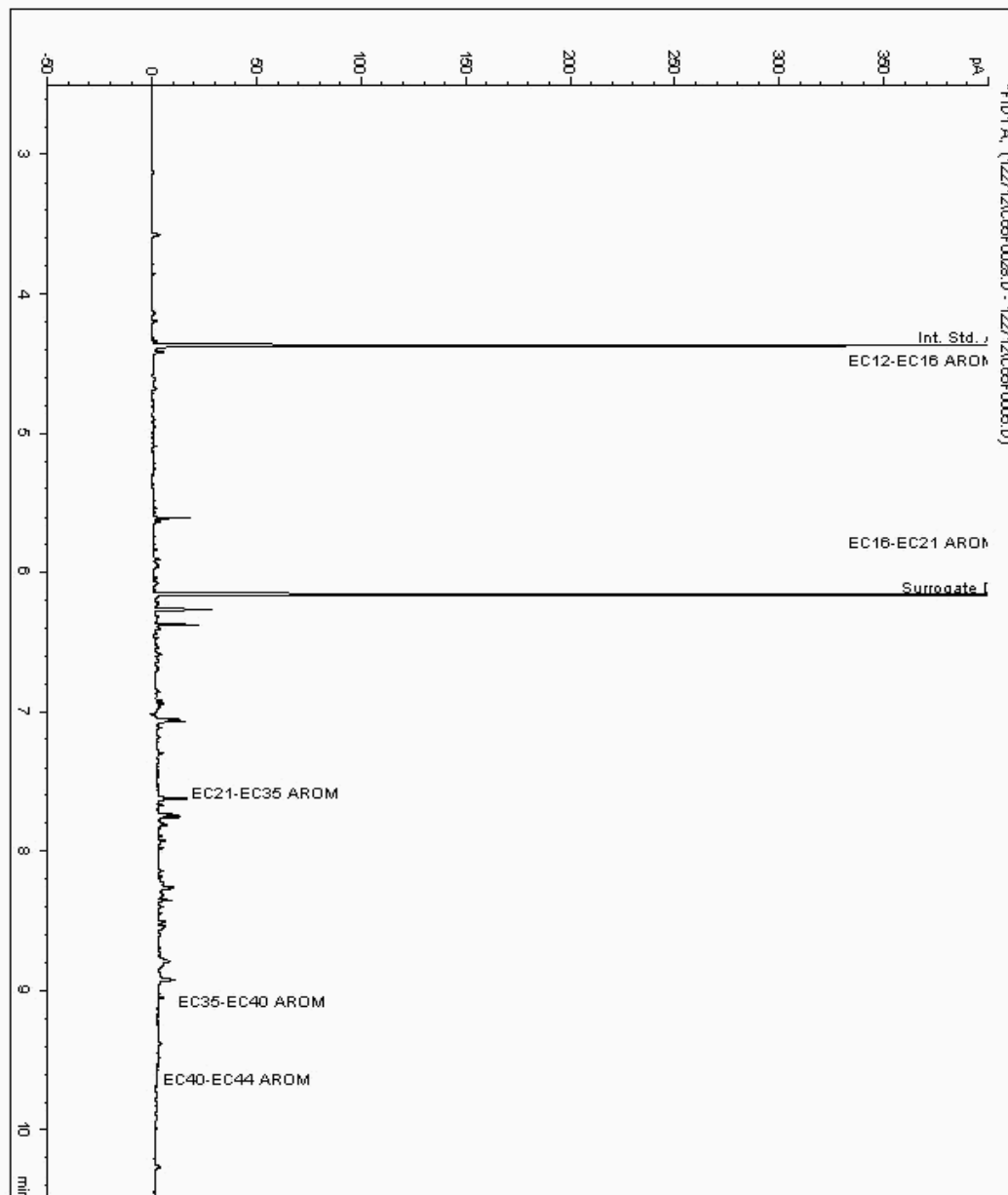
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 6713514
Sample ID : BH 103

Depth : 0.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6447789-6713514
Date Acquired : 27/12/12 23:33:16 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.040





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

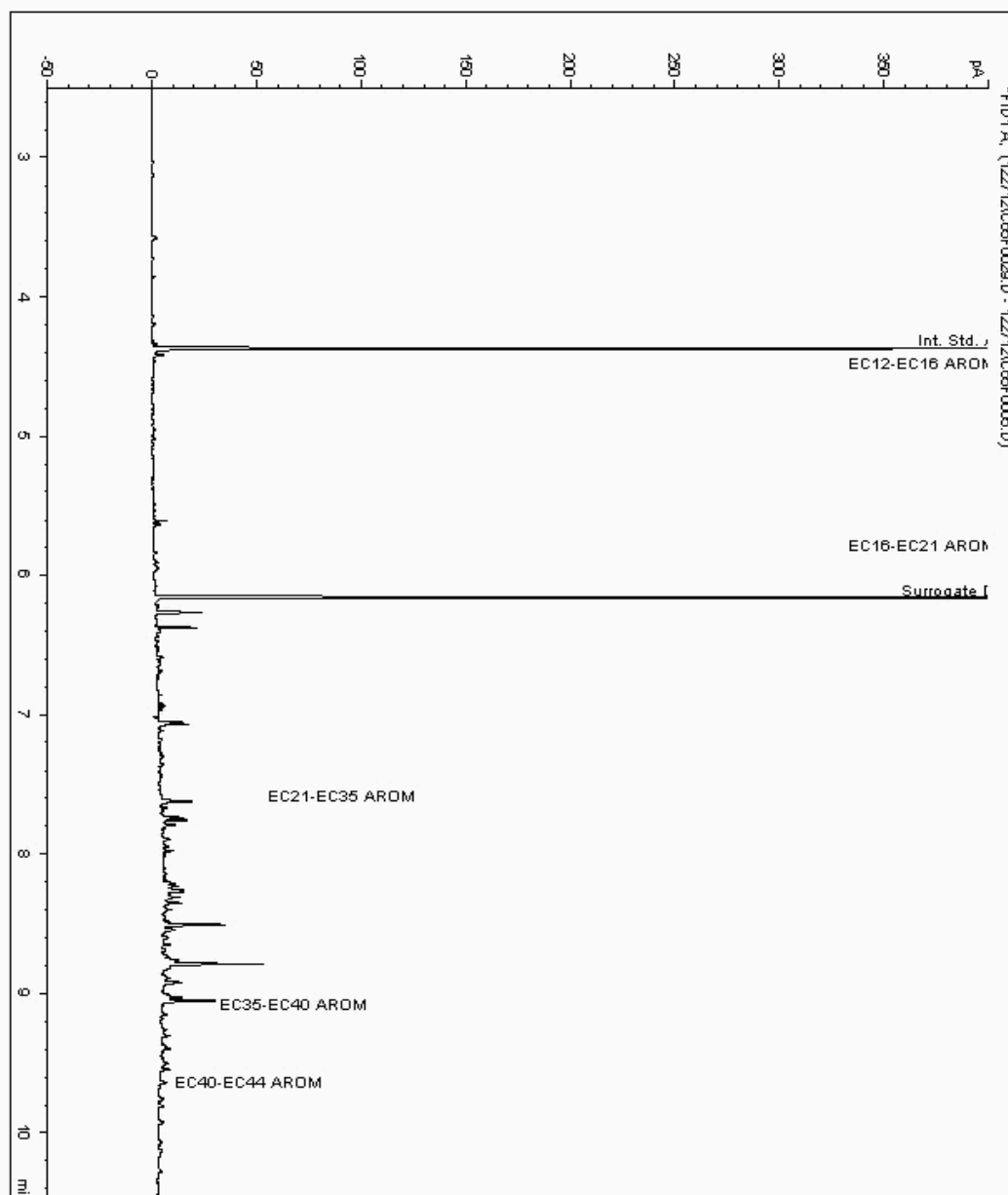
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 6713574
Sample ID : BH 105

Depth : 0.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6447813-6713574
Date Acquired : 27/12/12 23:54:09 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.010





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

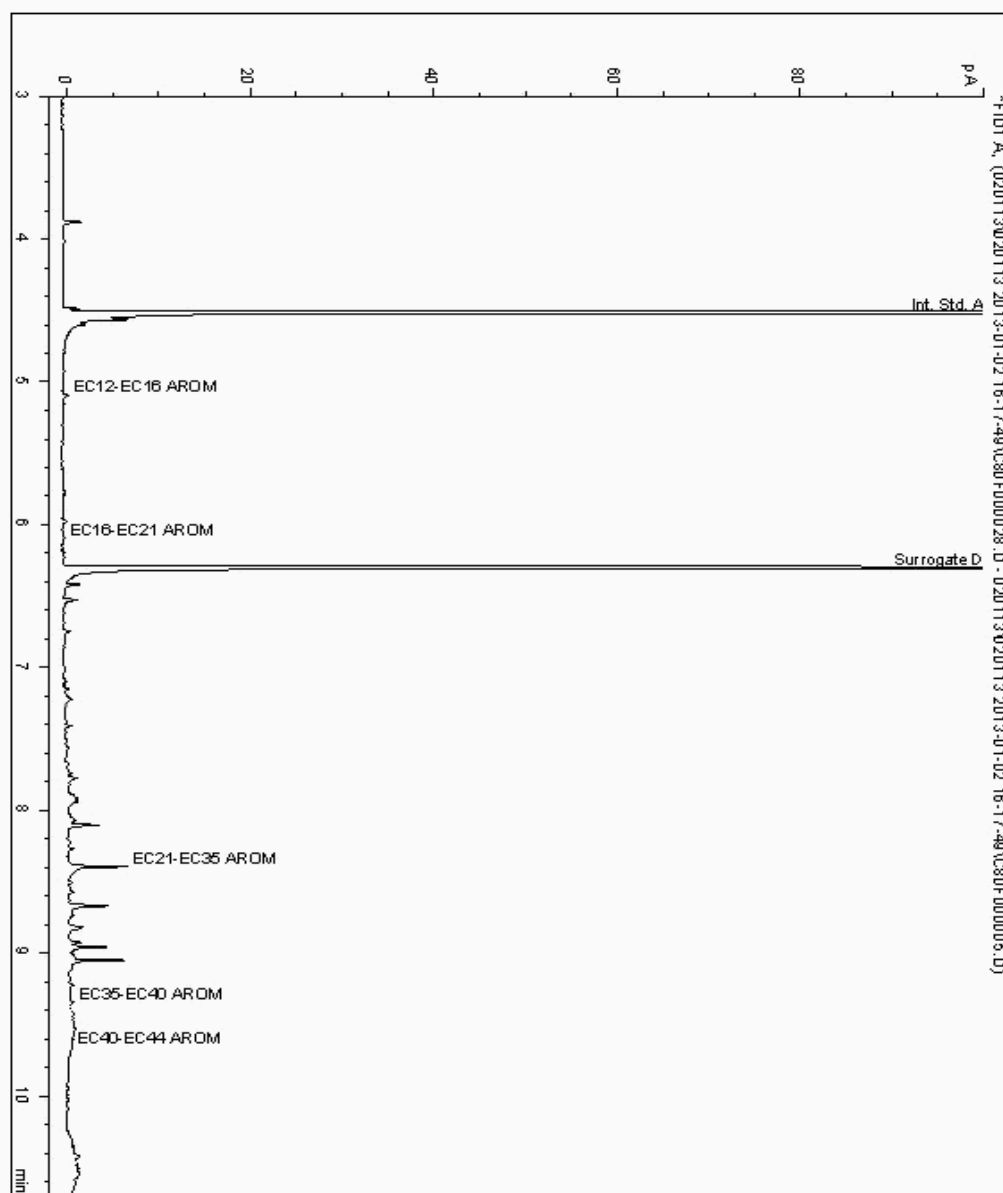
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 6718437
Sample ID : BH 104

Depth : 0.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6447545-6718437
Date Acquired : 03/01/13 00:54:19
Units : ppb
Dilution :
CF : 1
Multiplier : 1.010





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

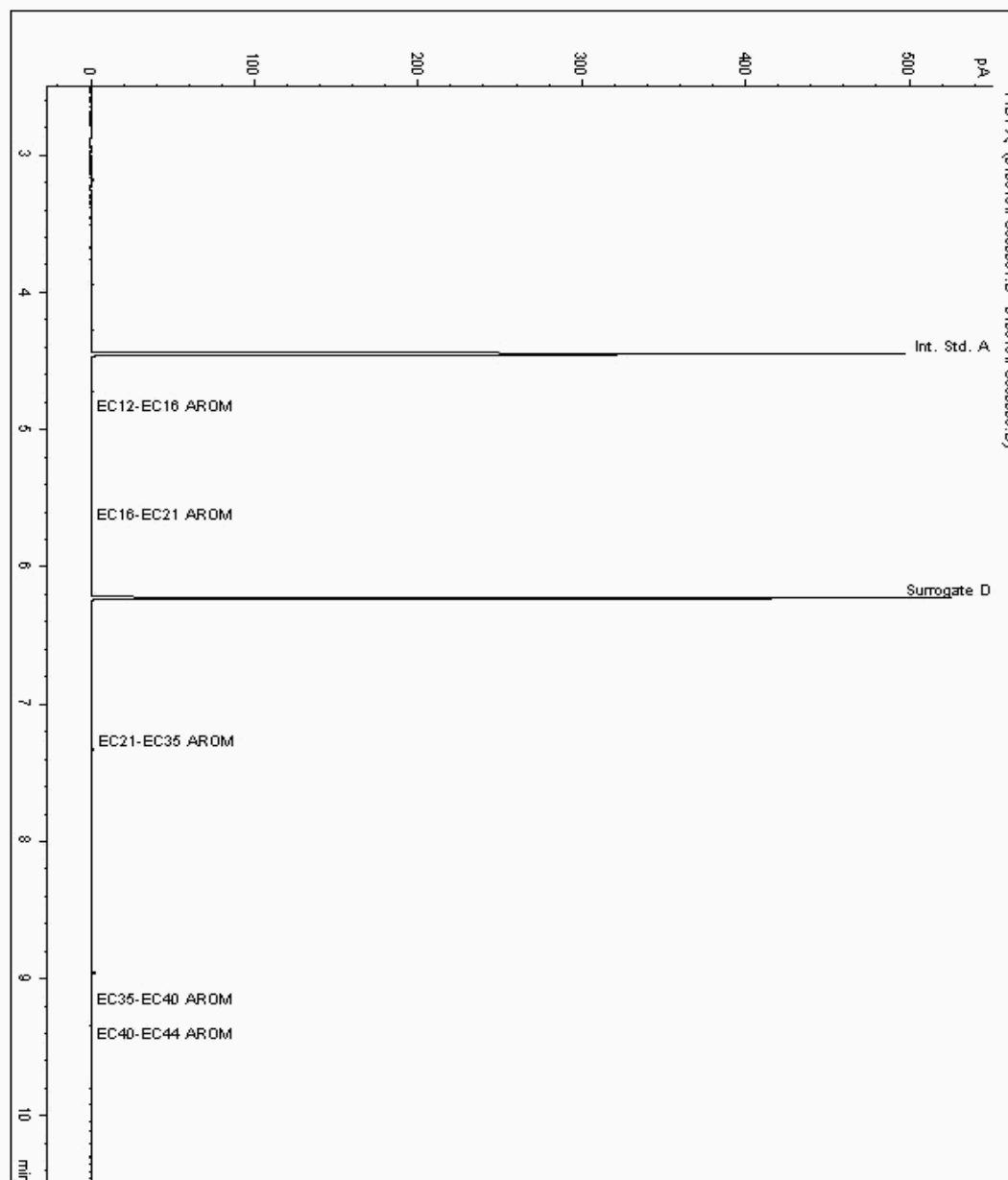
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6704814
Sample ID : BH 104

Depth : 4.80

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6451217-6704814
Date Acquired : 04/01/13 01:18:10 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

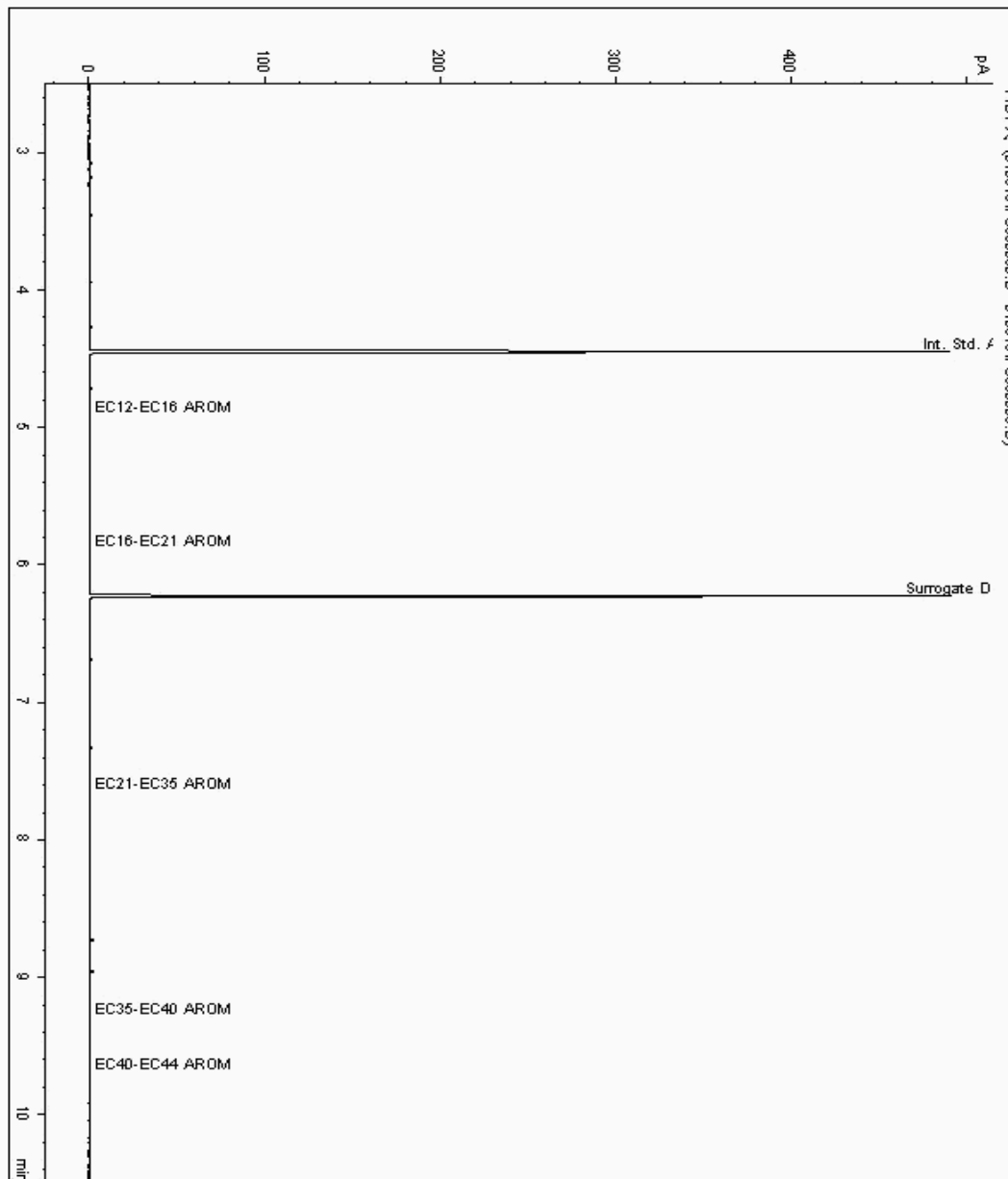
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6704975
Sample ID : BH 103

Depth : 3.00 - 7.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6451175-6704975
Date Acquired : 04/01/13 00:59:30 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

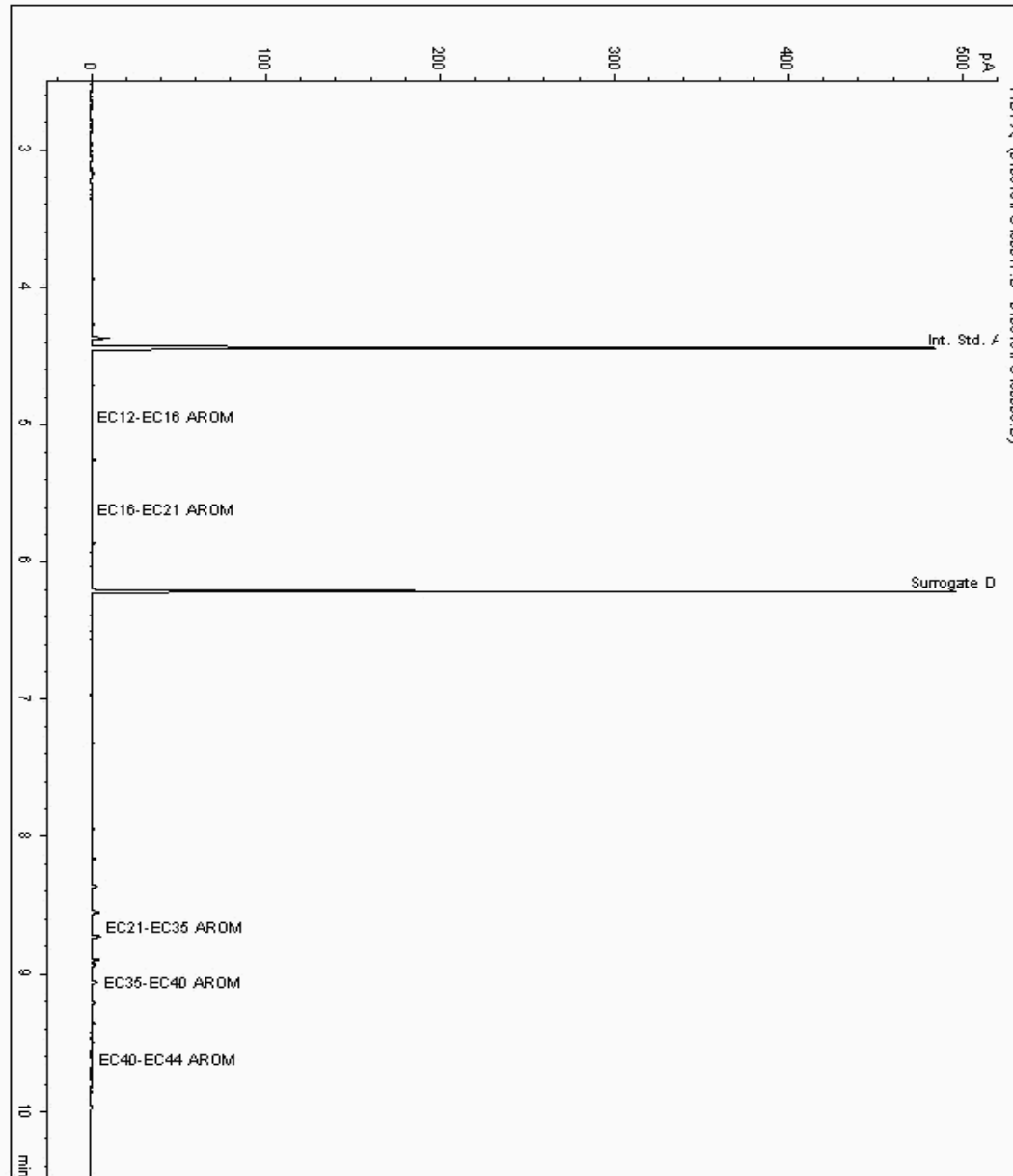
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6705053
Sample ID : BH 103

Depth : 0.50 - 3.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6452159-6705053
Date Acquired : 03/01/2013 21:52:23 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

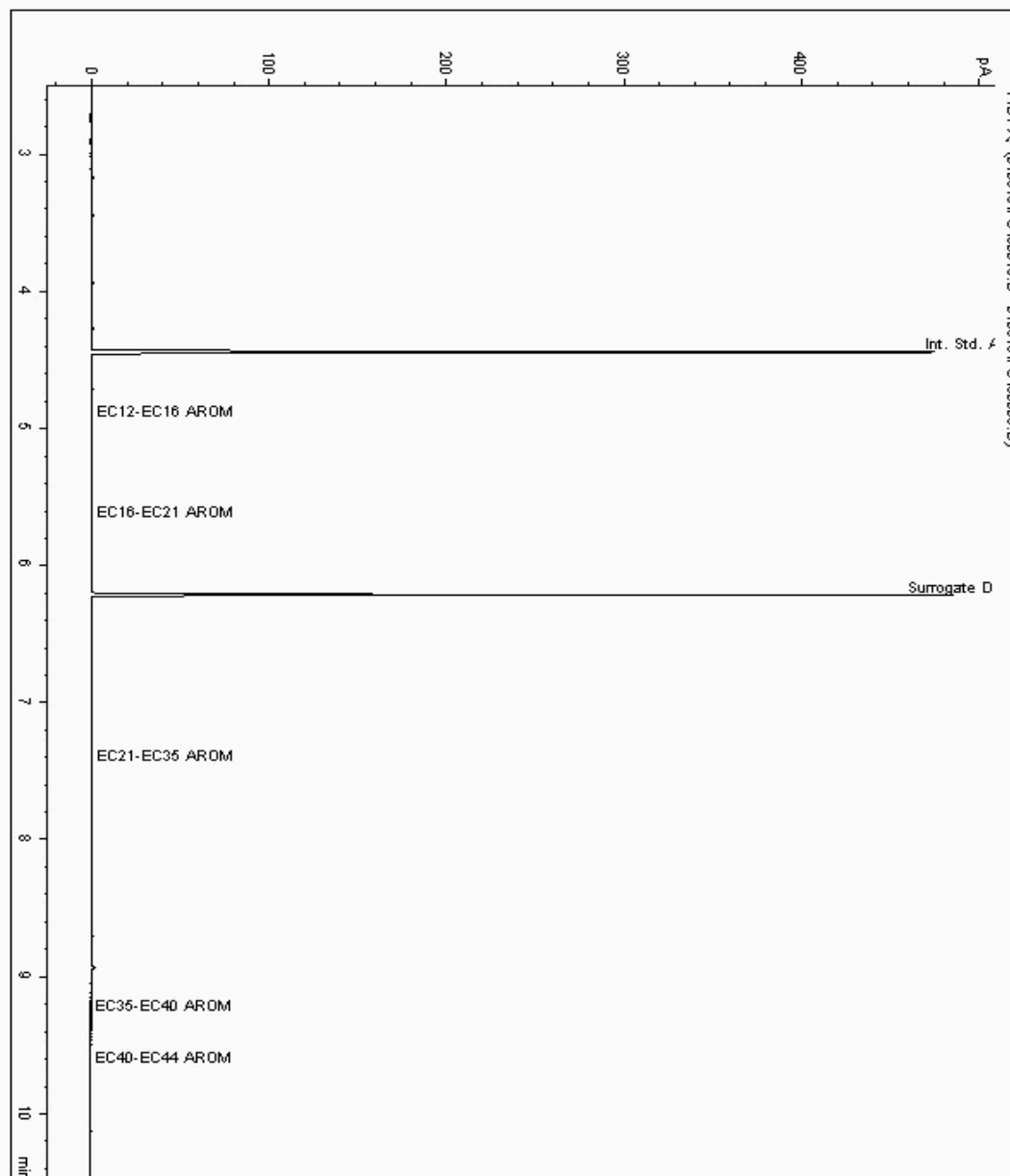
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6705101
Sample ID : BH 104

Depth : 3.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6451189-6705101
Date Acquired : 03/01/2013 21:33:19 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

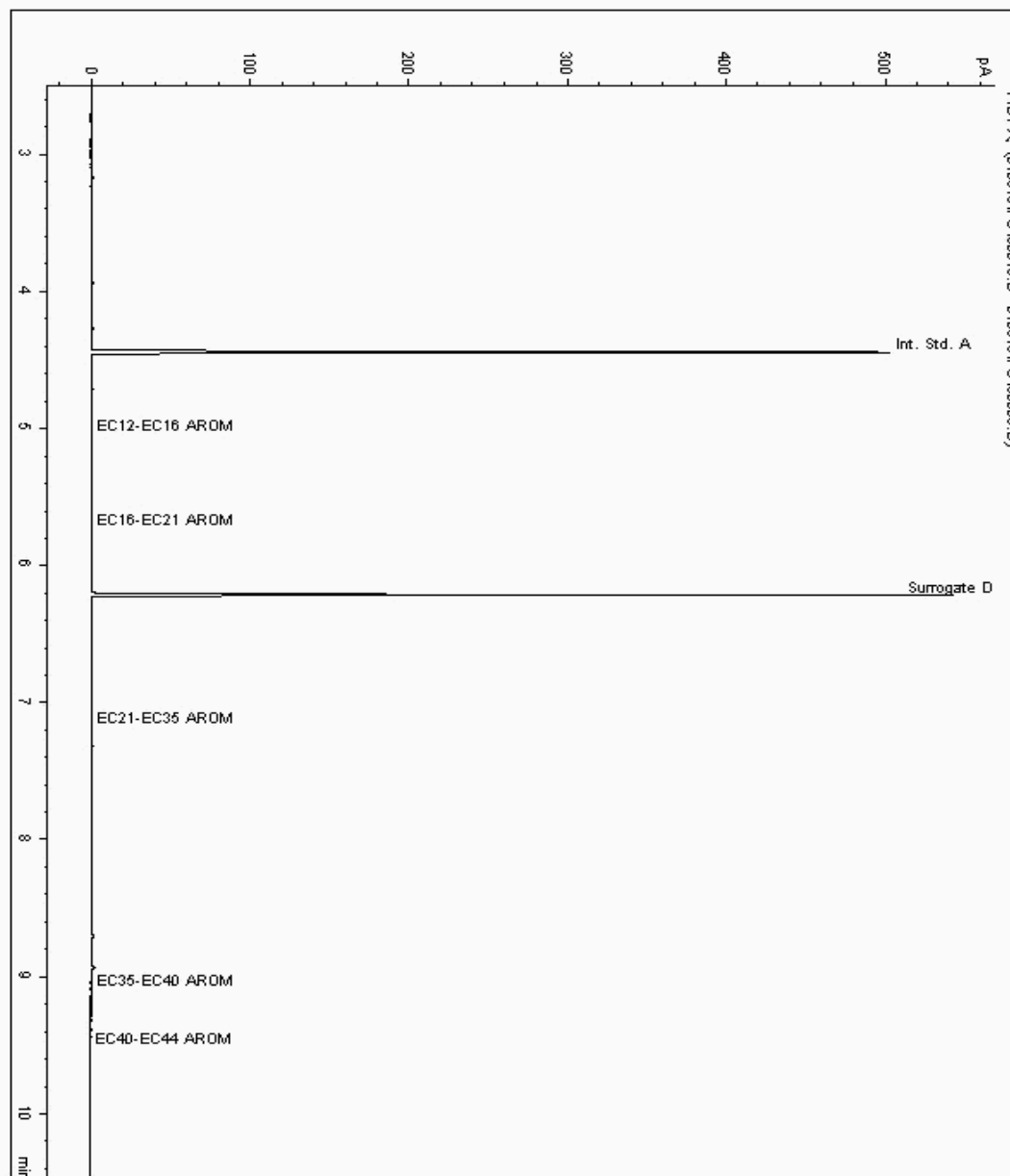
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6705115
Sample ID : BH 105

Depth : 3.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6451158-6705115
Date Acquired : 03/01/2013 21:14:04 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

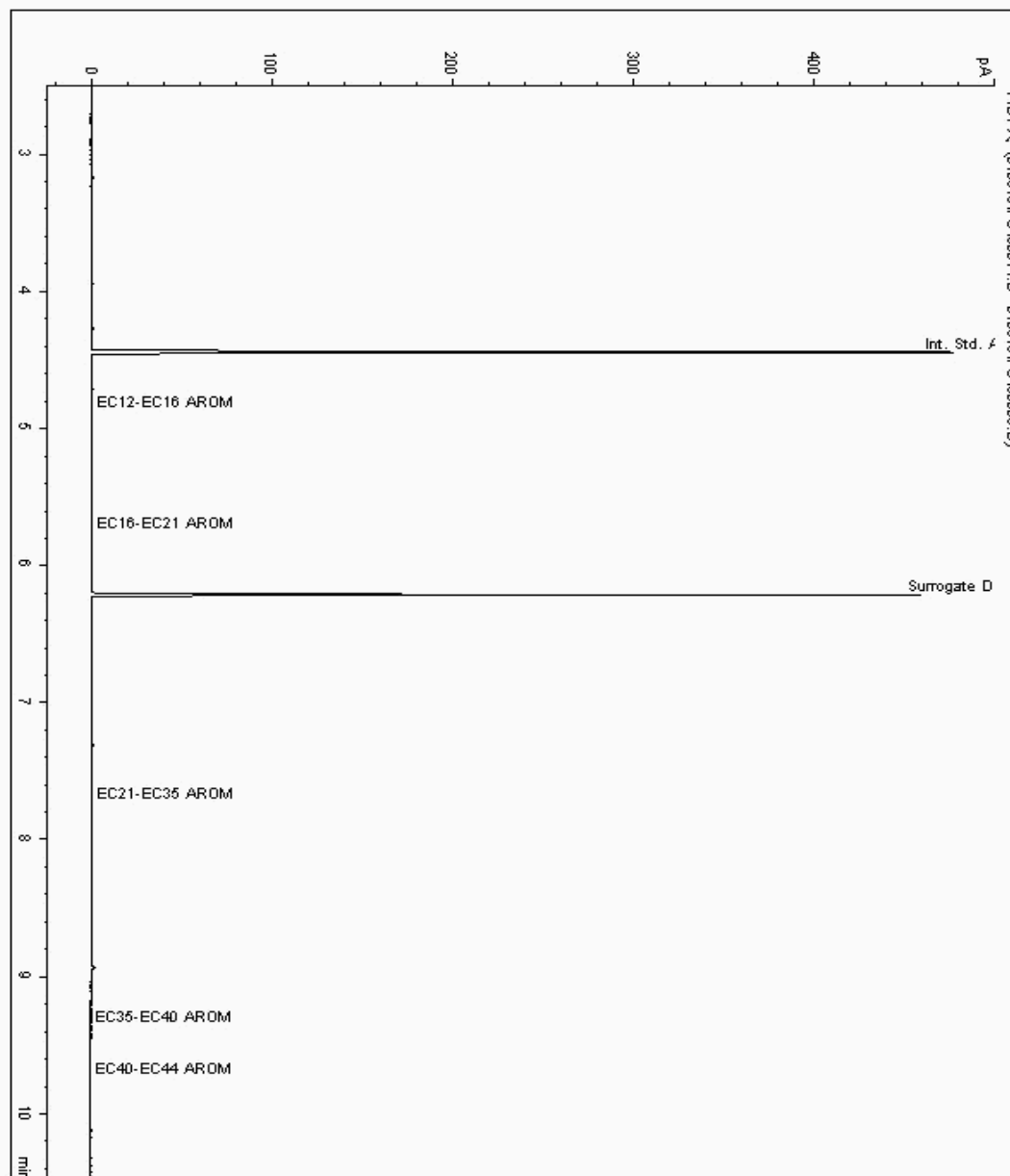
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6705138
Sample ID : BH 105

Depth : 4.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6451203-6705138
Date Acquired : 03/01/2013 20:55:05 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.009





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

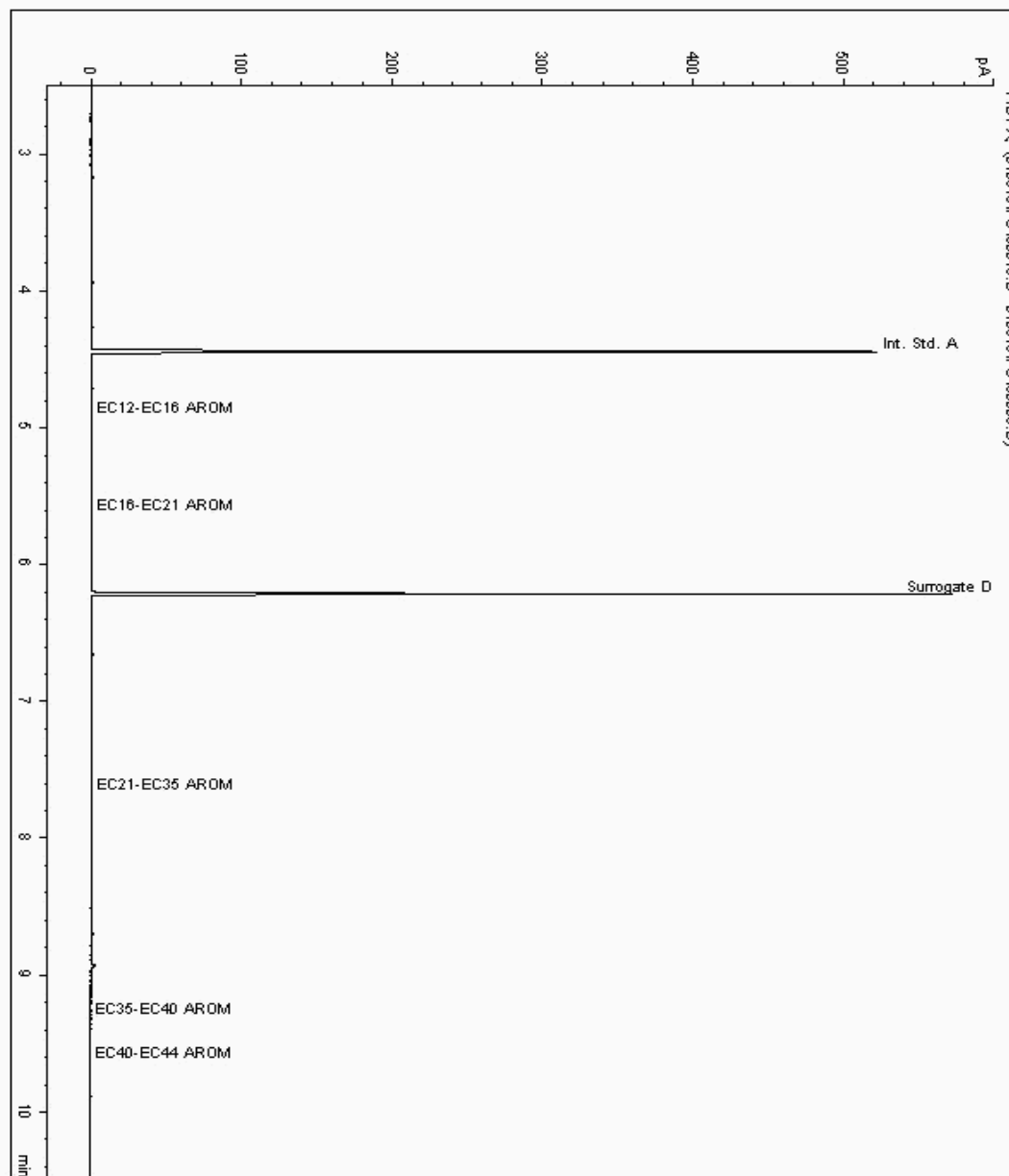
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6721640
Sample ID : BH 104

Depth : 3.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6464444-6721640
Date Acquired : 03/01/2013 20:36:04 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

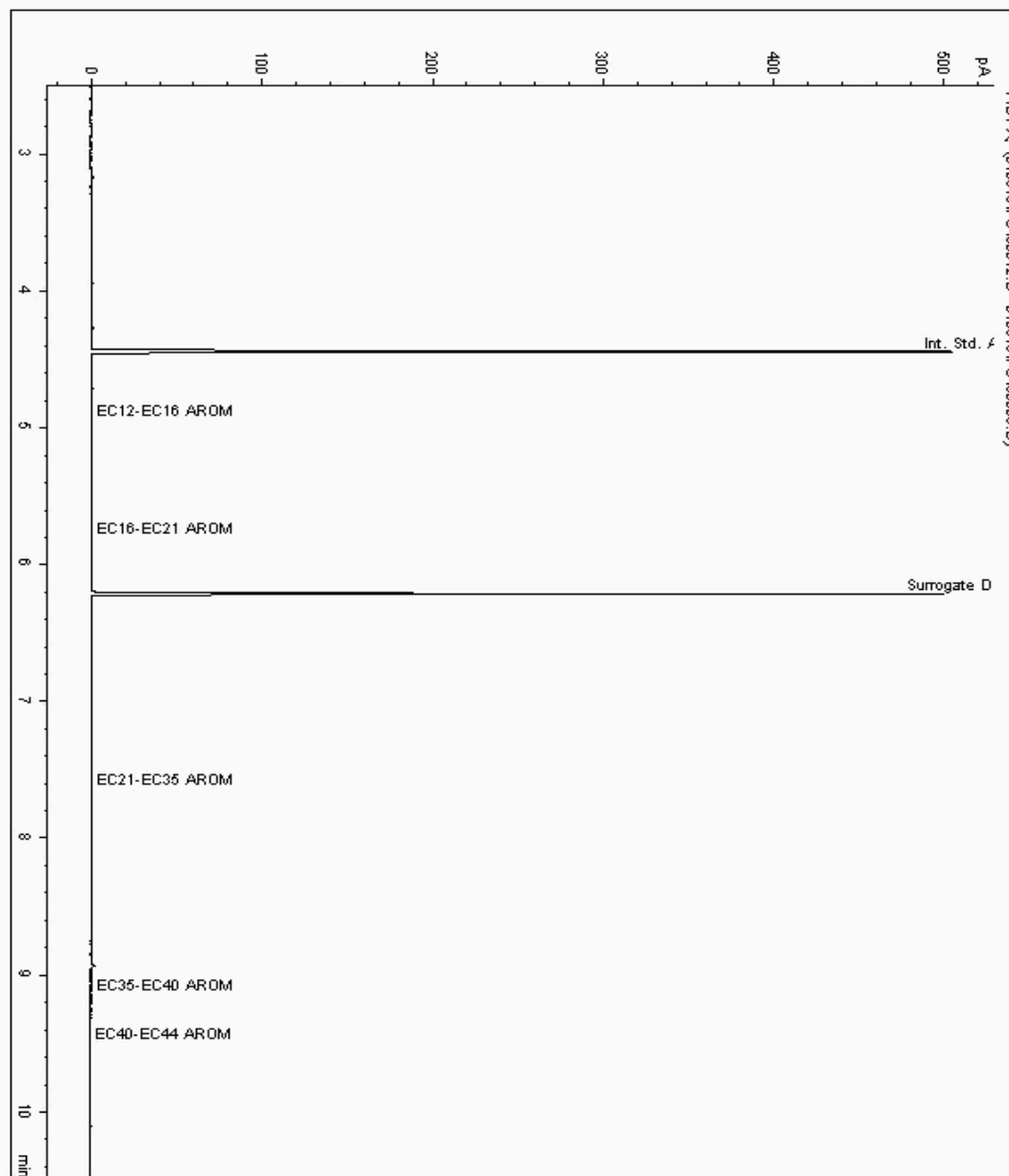
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6721643
Sample ID : BH 105

Depth : 4.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6464473-6721643
Date Acquired : 03/01/2013 20:17:03 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

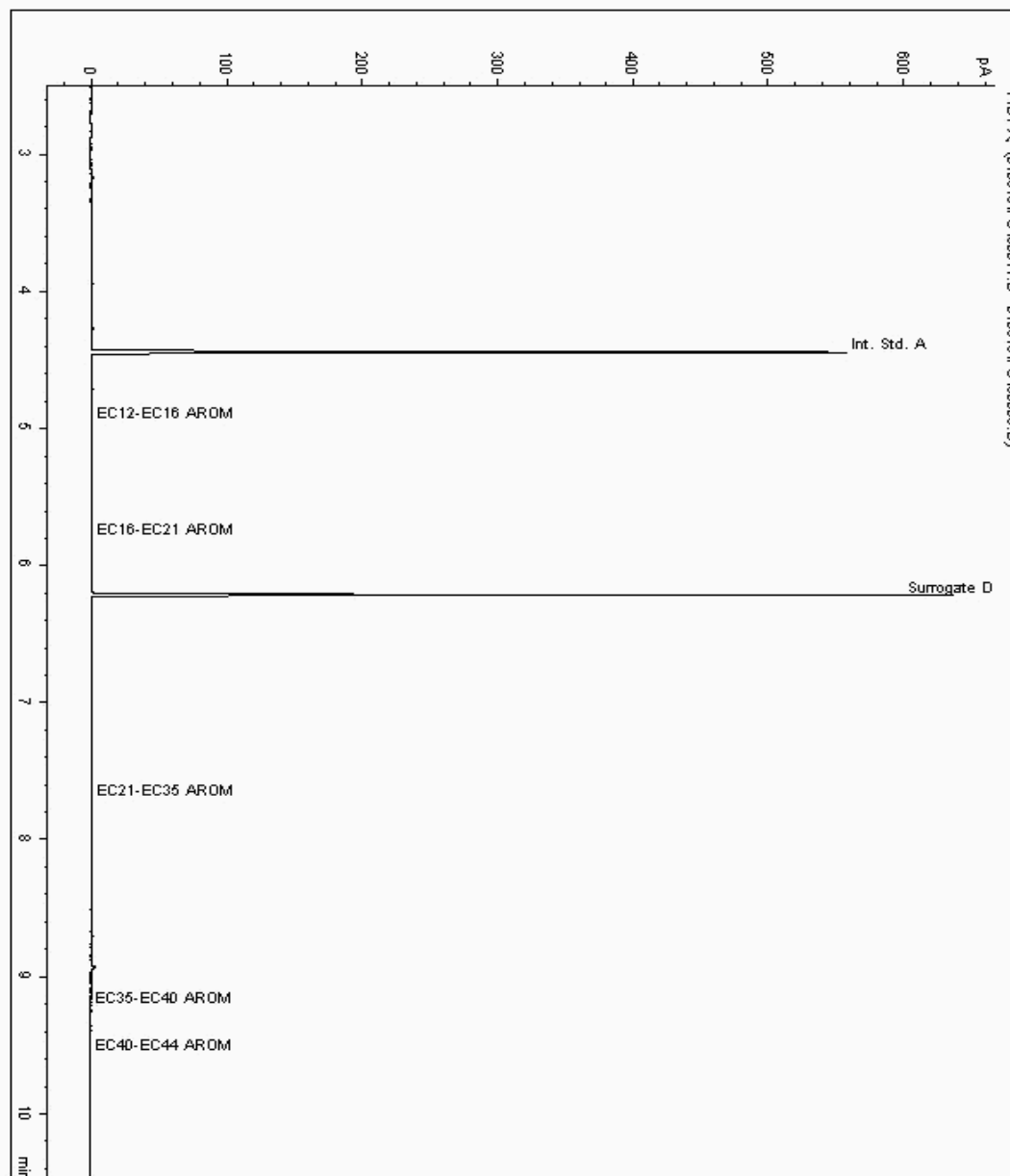
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6721648
Sample ID : BH 105

Depth : 3.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6464387-6721648
Date Acquired : 03/01/2013 19:58:06 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

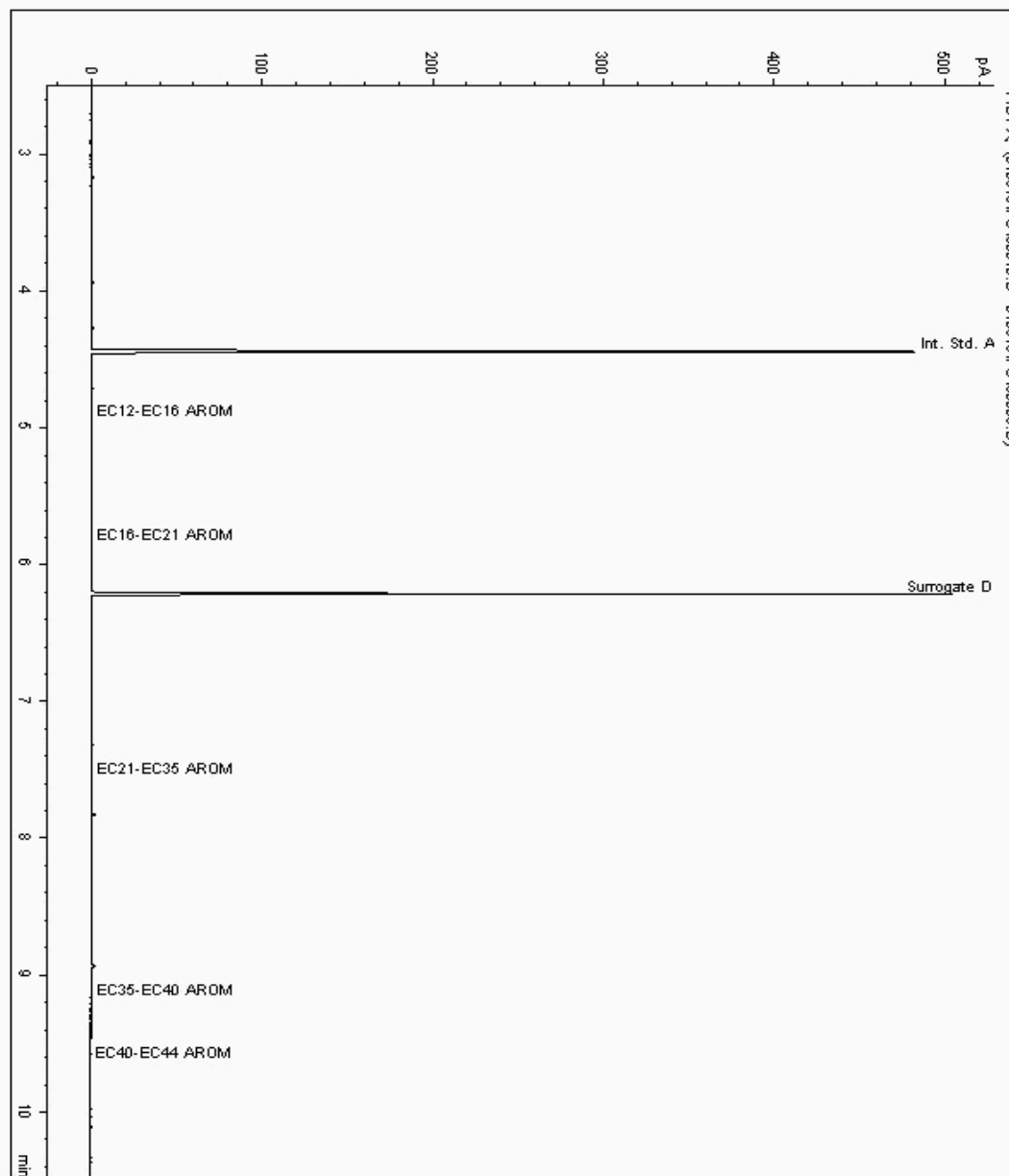
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6721654
Sample ID : BH 104

Depth : 4.80

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6464504-6721654
Date Acquired : 03/01/2013 19:39:11 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.010





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

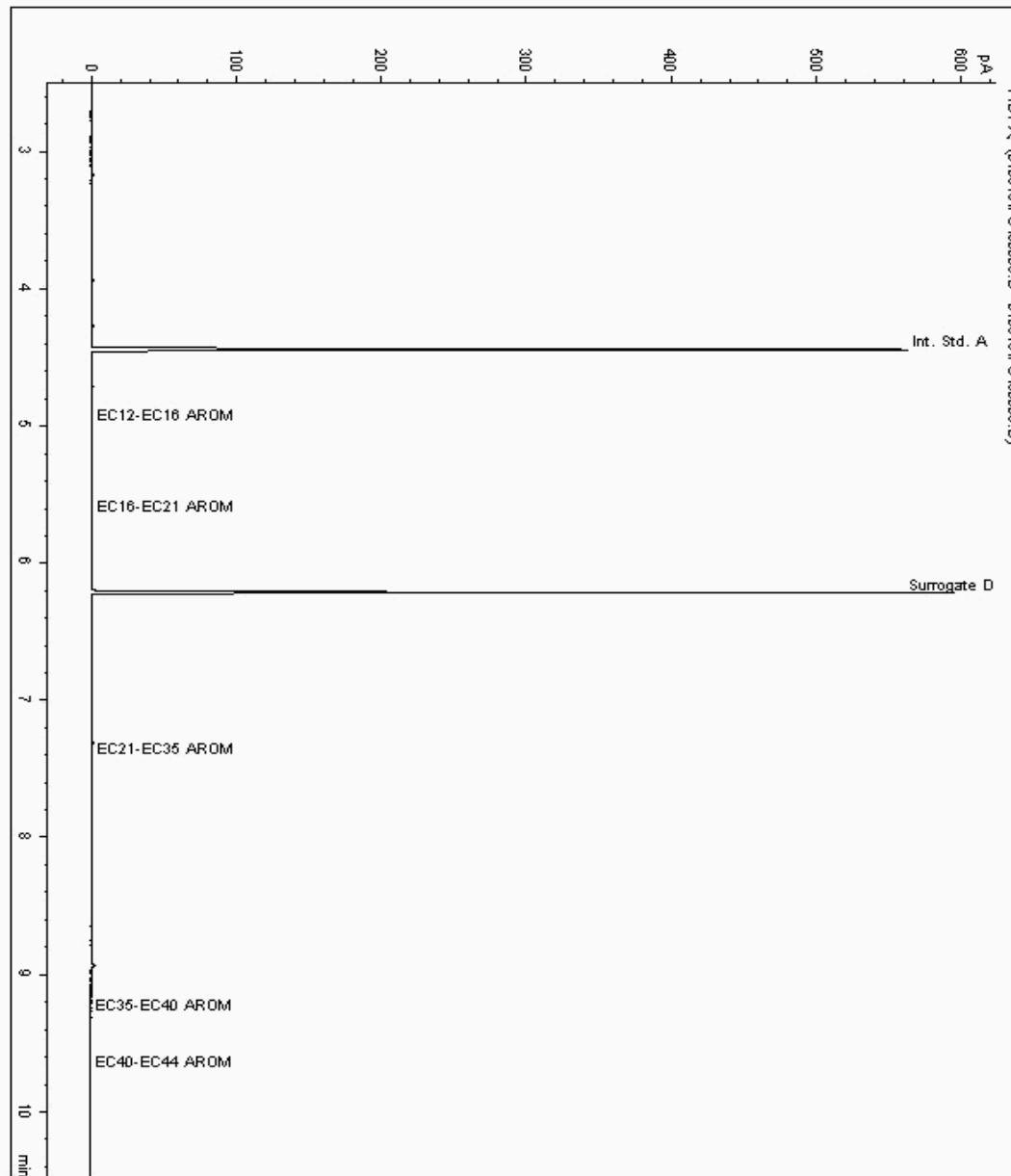
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6721664
Sample ID : BH 103

Depth : 0.50 - 3.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6464531-6721664
Date Acquired : 03/01/2013 19:20:16 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

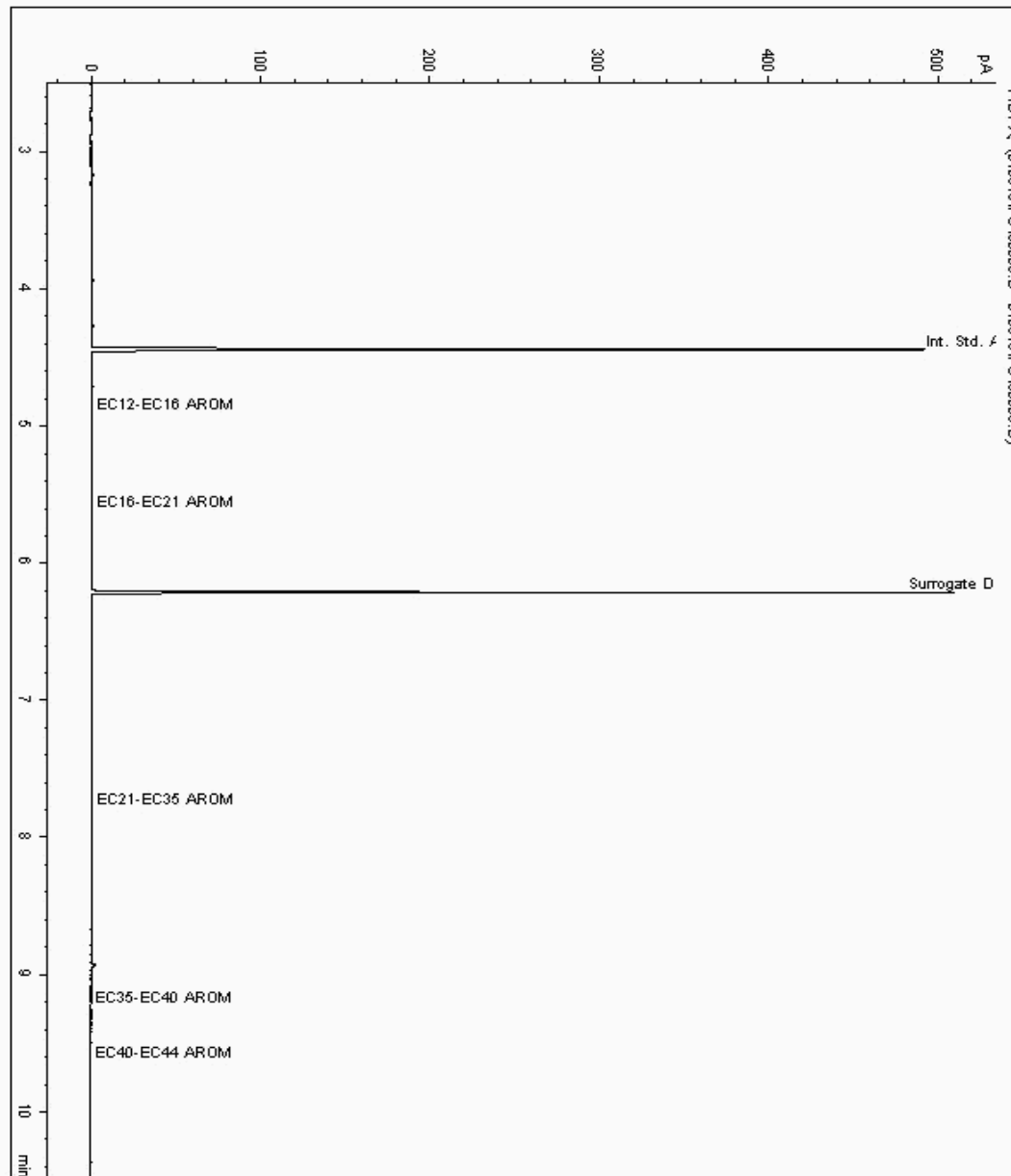
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6721669
Sample ID : BH 103

Depth : 3.00 - 7.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6464416-6721669
Date Acquired : 03/01/2013 19:01:10 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

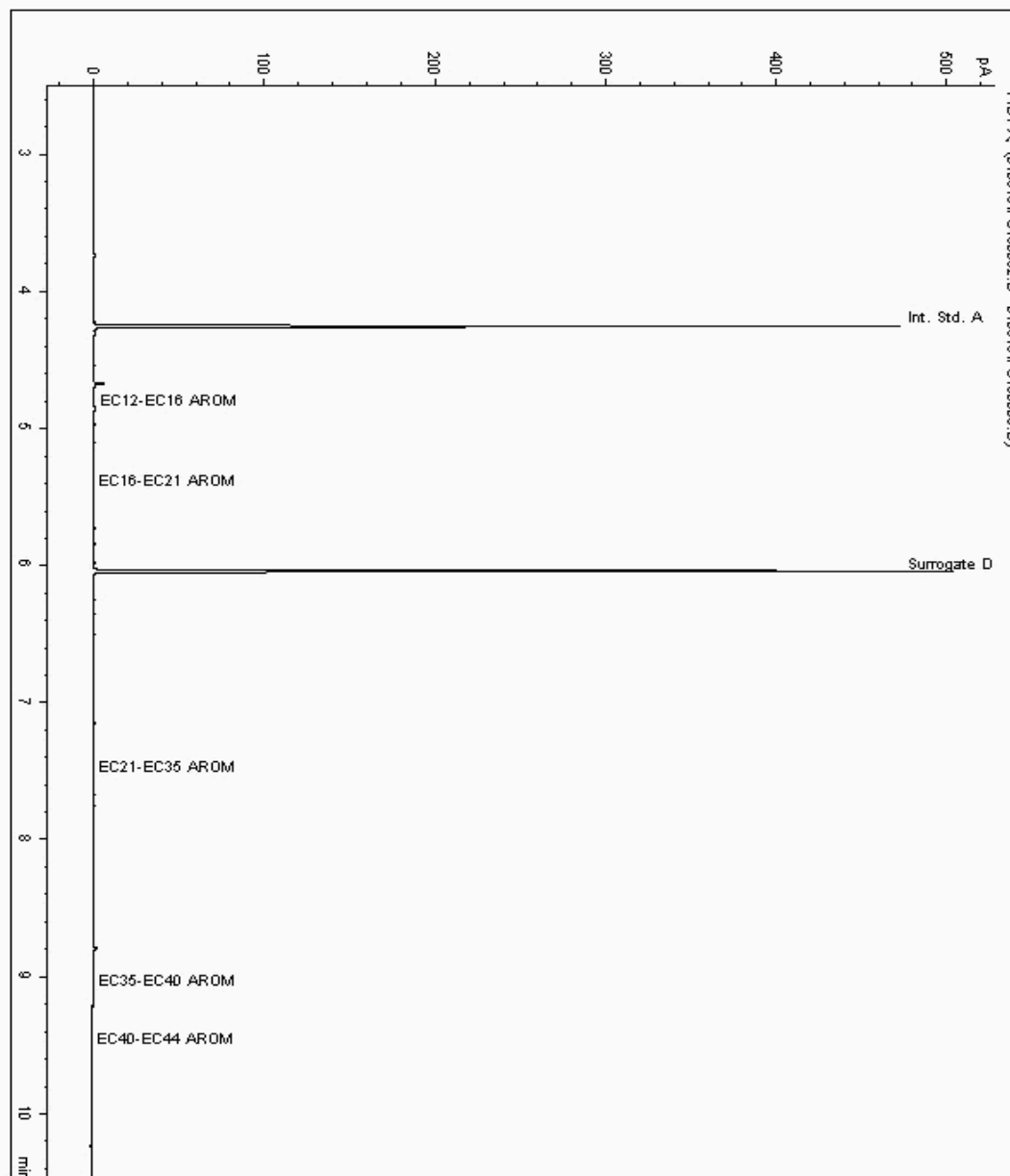
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6732037
Sample ID : BH 104

Depth : 2.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6451137-6732037
Date Acquired : 04/01/2013 15:11:44 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

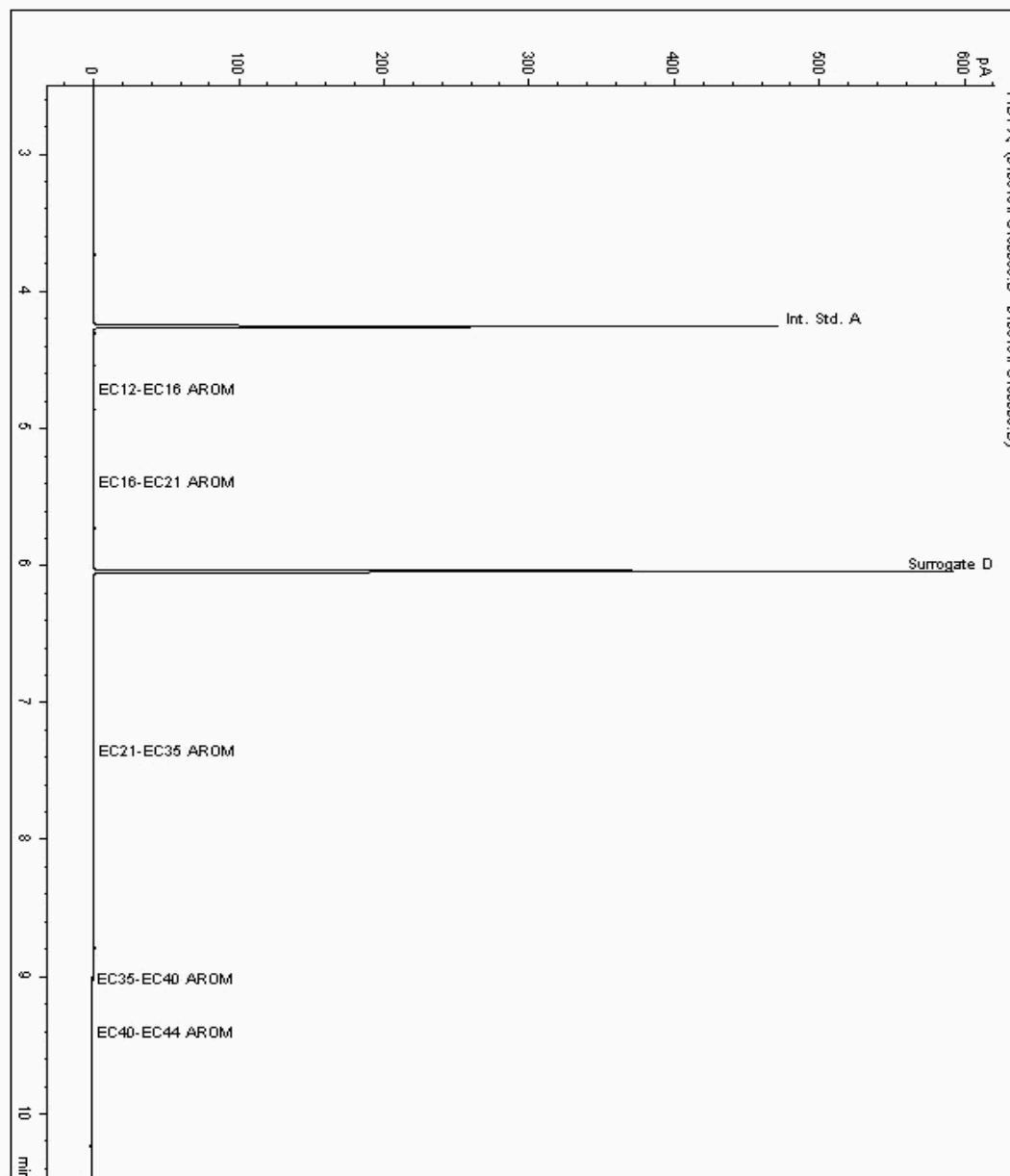
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6732054
Sample ID : BH 104

Depth : 2.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6472234-6732054
Date Acquired : 04/01/2013 15:30:25 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

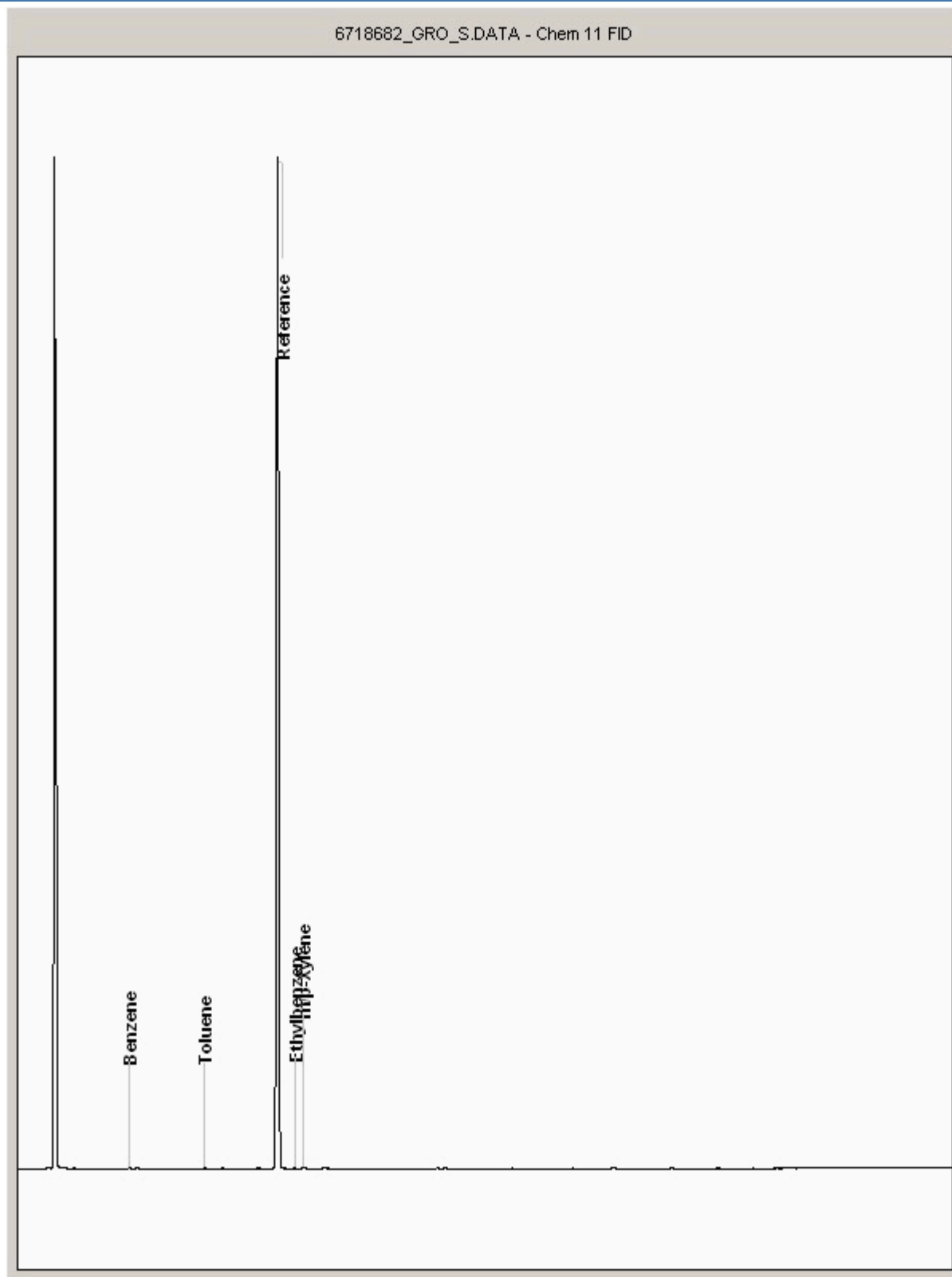
Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 6718682
Sample ID : BH 104

Depth : 0.50





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

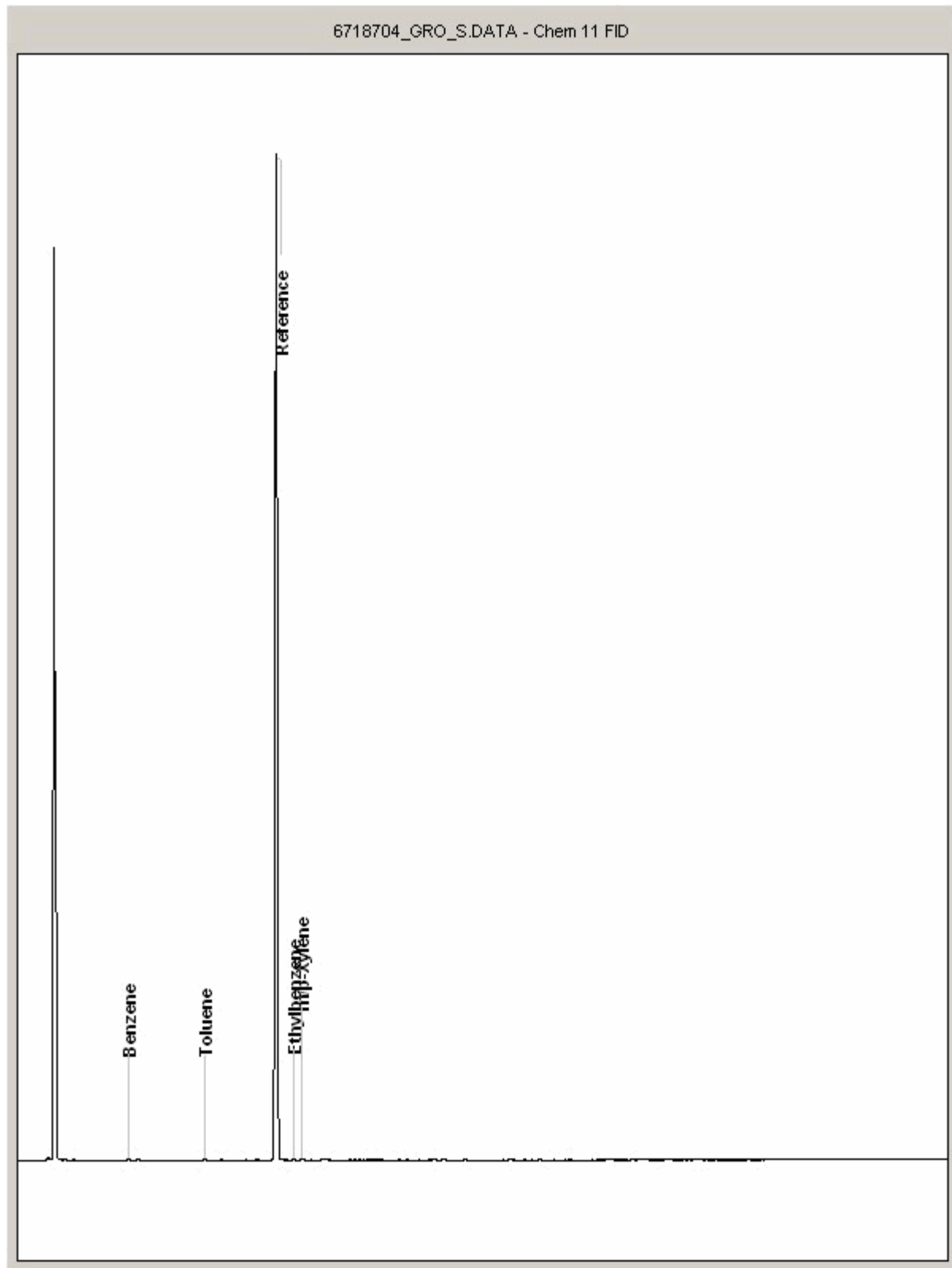
Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 6718704
Sample ID : BH 105

Depth : 0.50





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

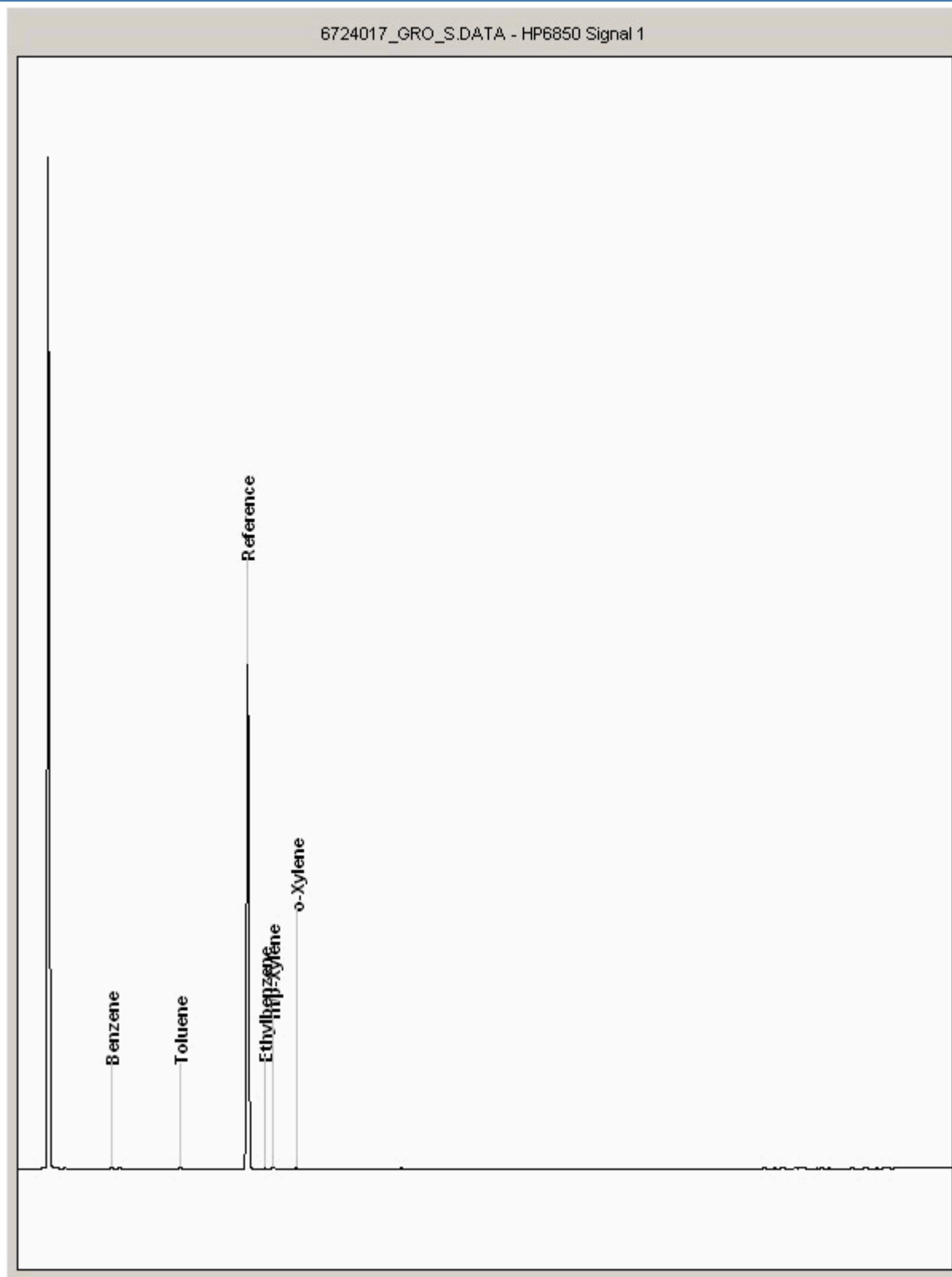
Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 6724017
Sample ID : BH 103

Depth : 0.50





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

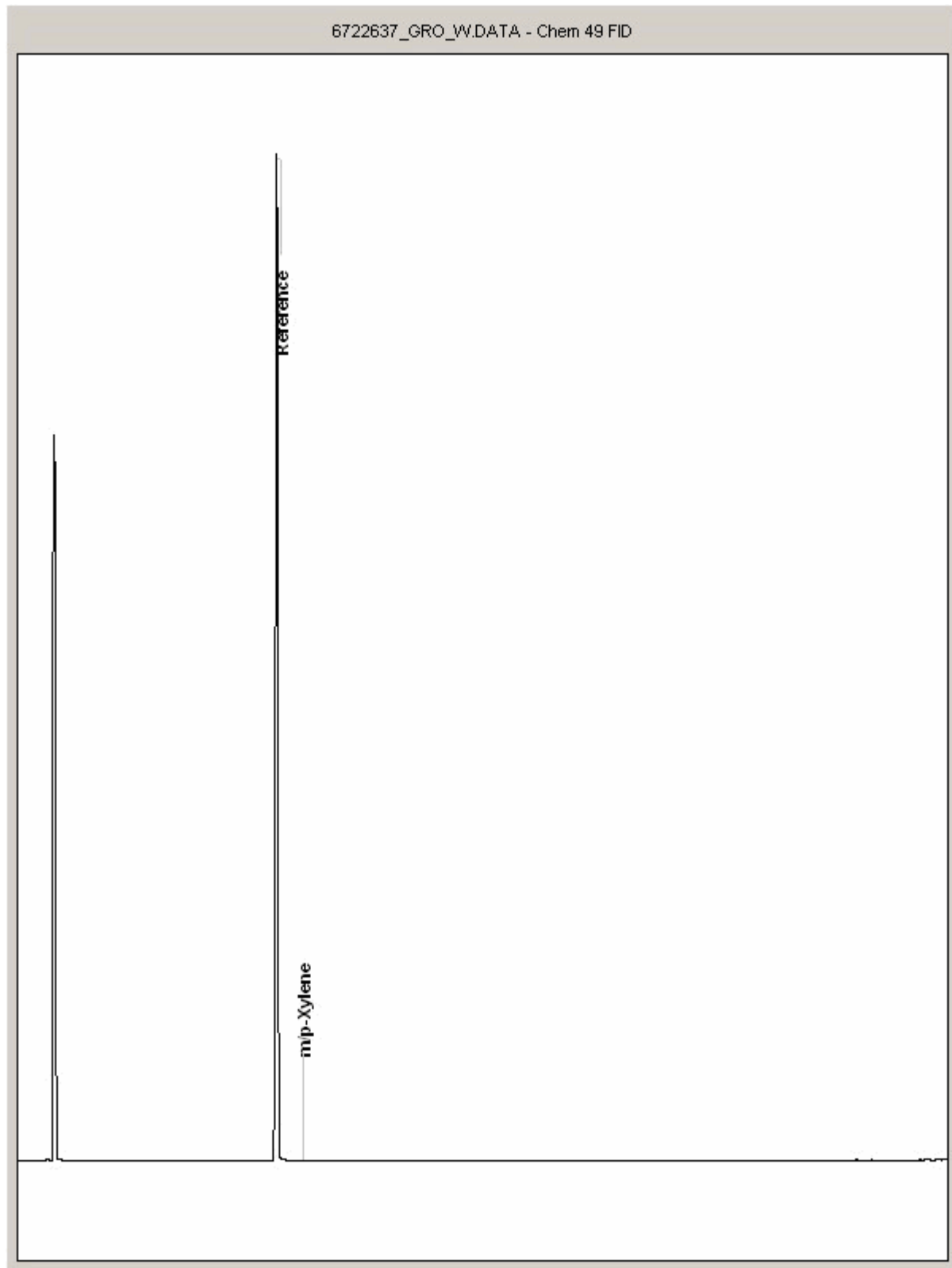
Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6722637
Sample ID : BH 104

Depth : 3.50





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

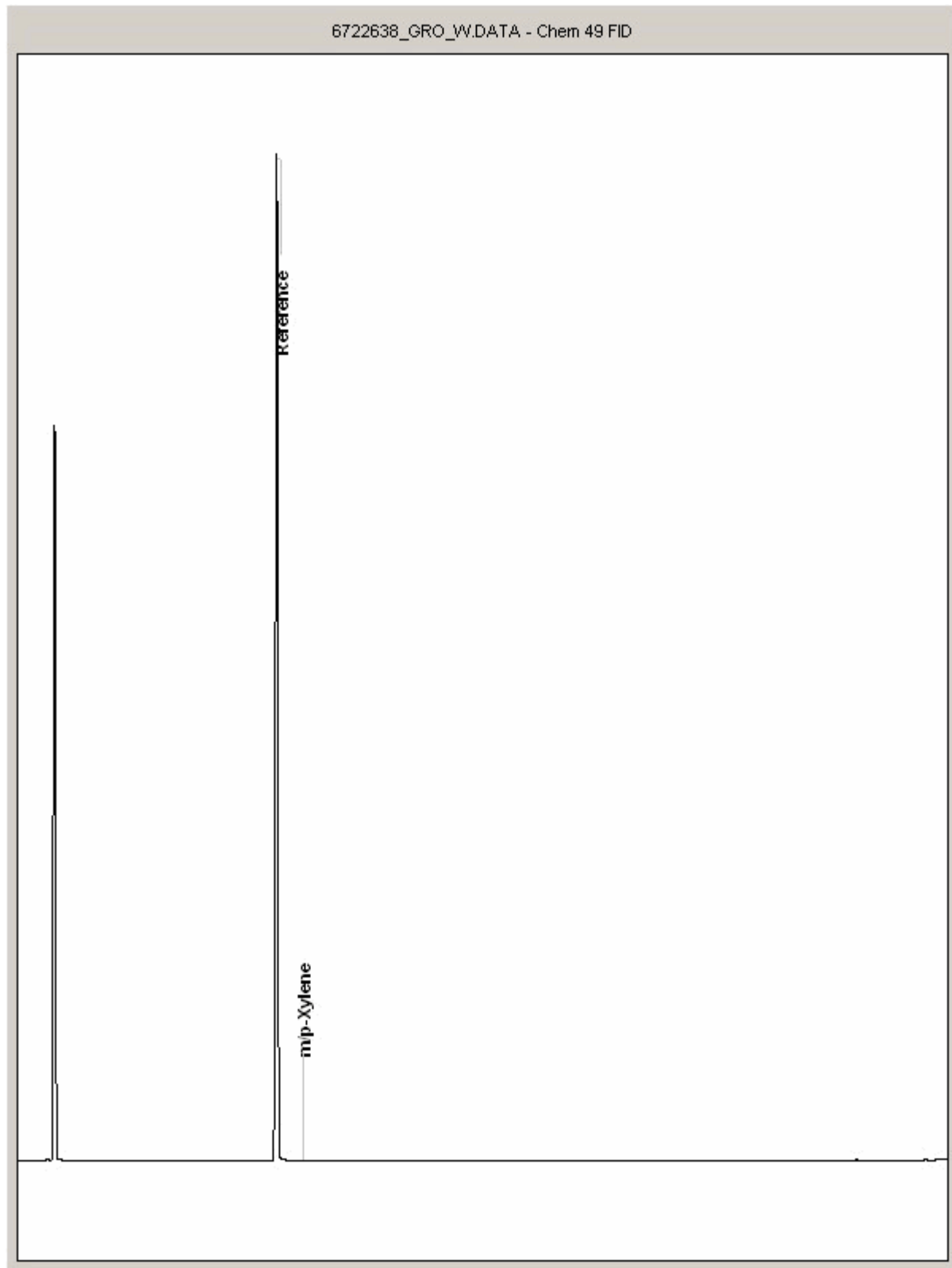
Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6722638
Sample ID : BH 103

Depth : 0.50 - 3.00





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

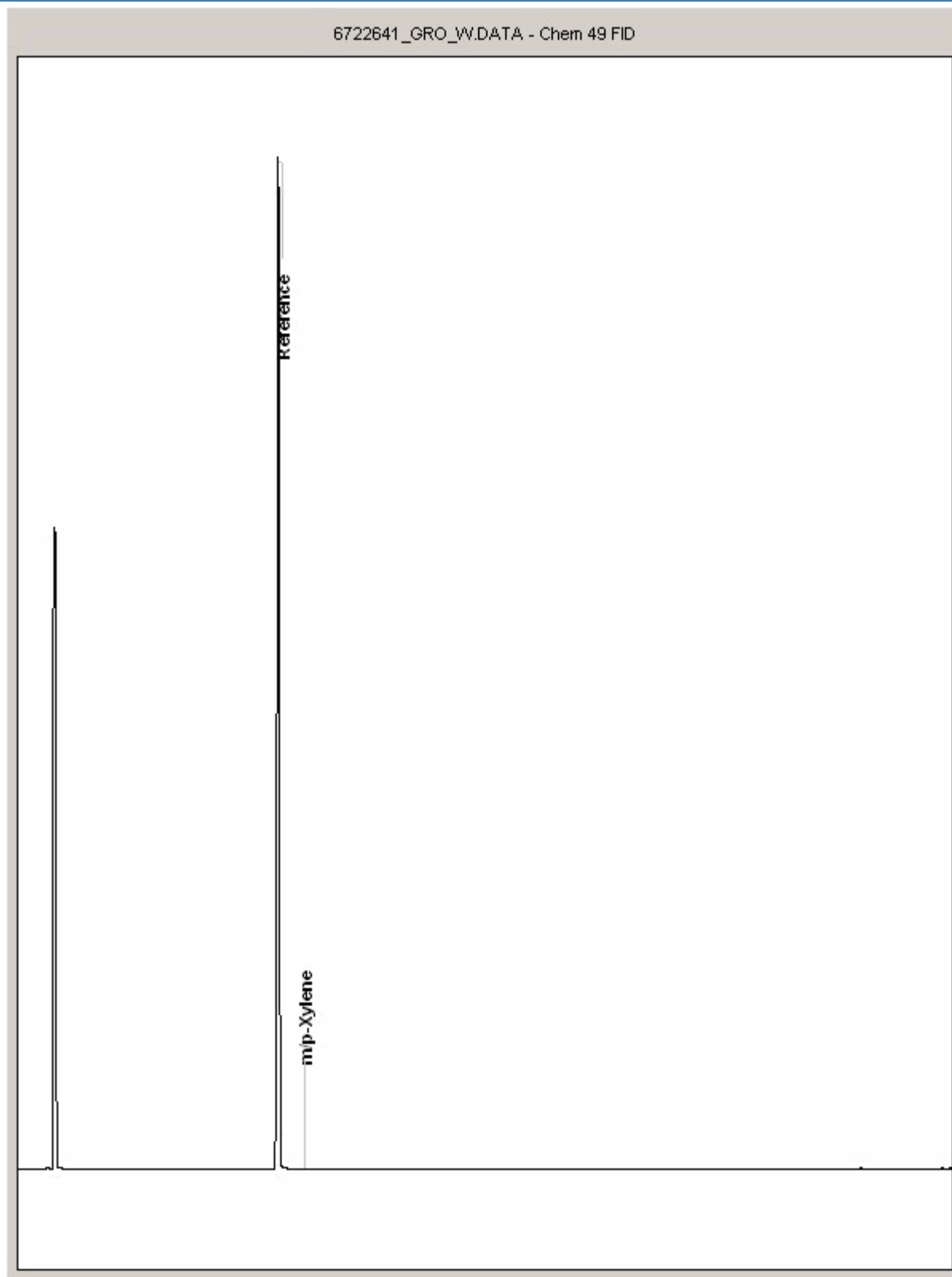
Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6722641
Sample ID : BH 103

Depth : 3.00 - 7.50





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

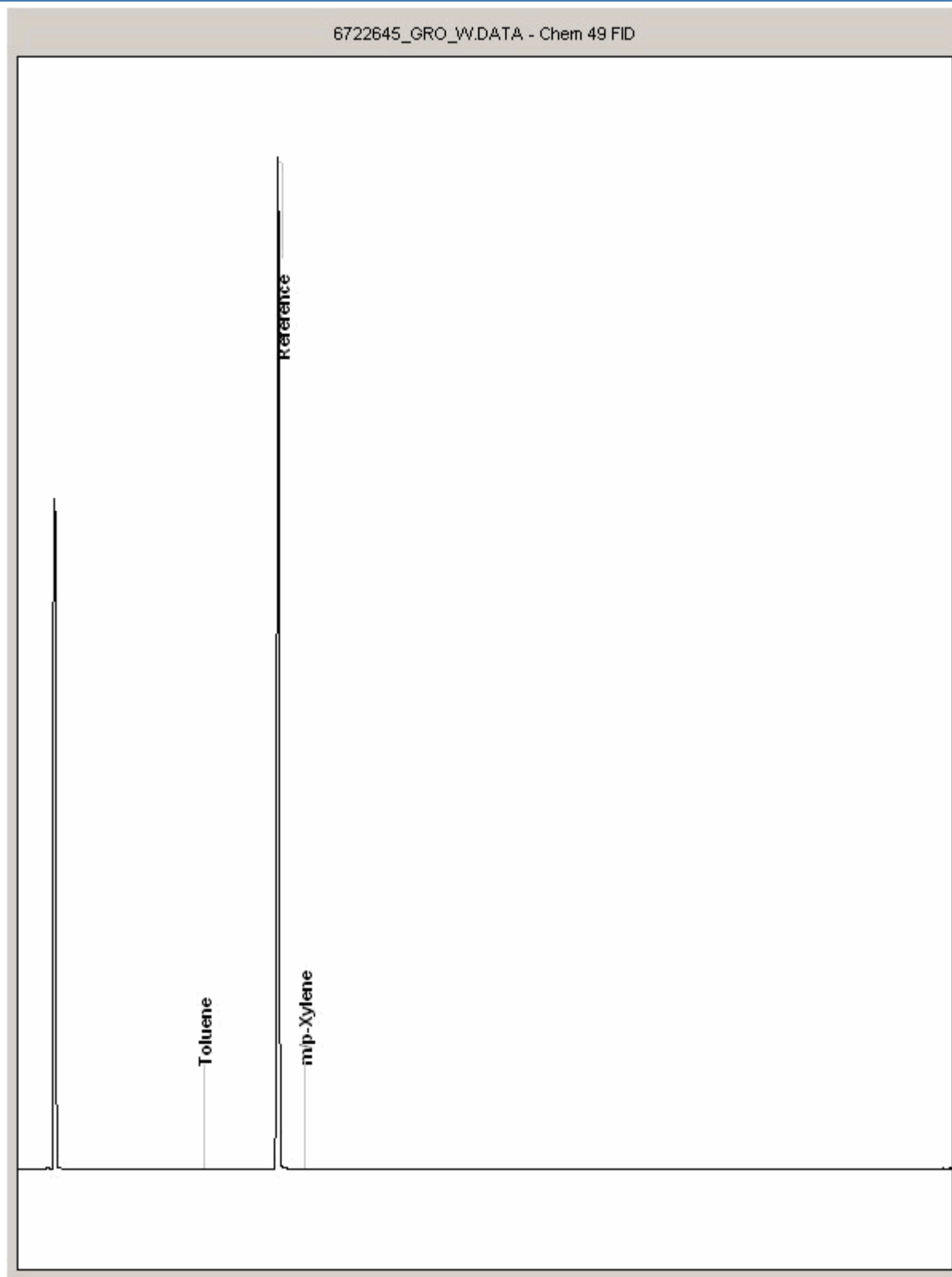
Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6722645
Sample ID : BH 104

Depth : 4.80





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

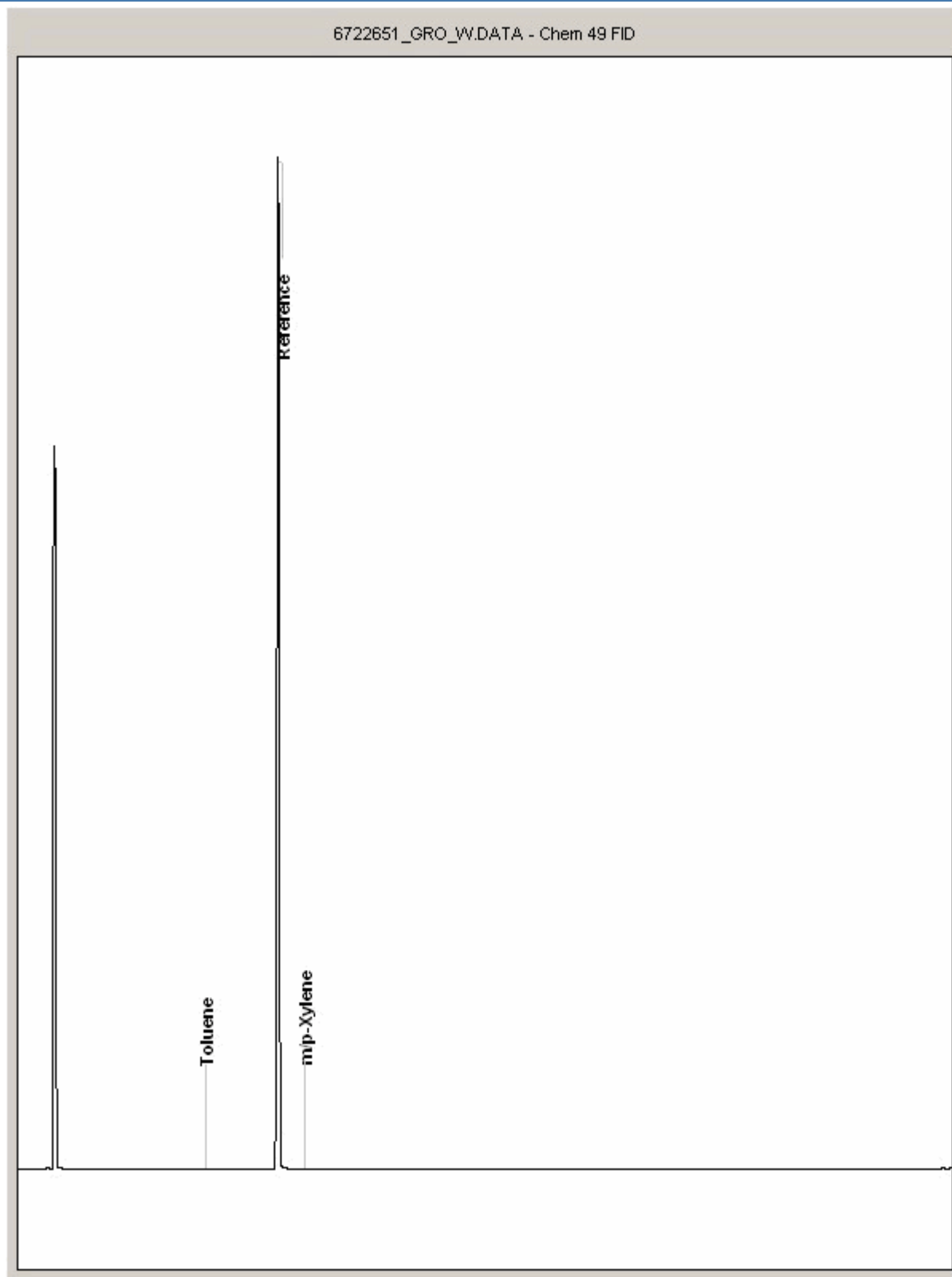
Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6722651
Sample ID : BH 105

Depth : 4.50





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

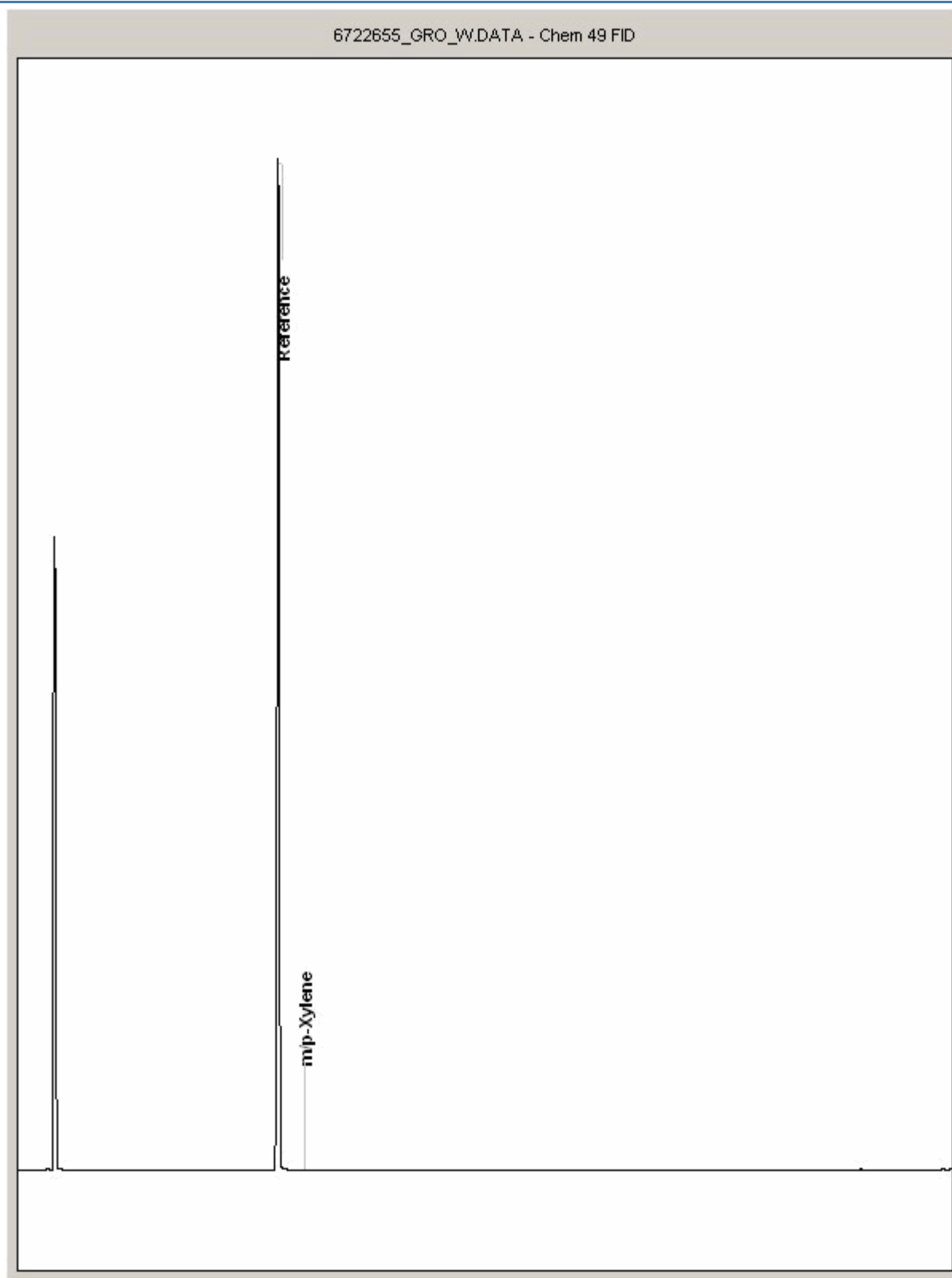
Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6722655
Sample ID : BH 105

Depth : 3.00





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

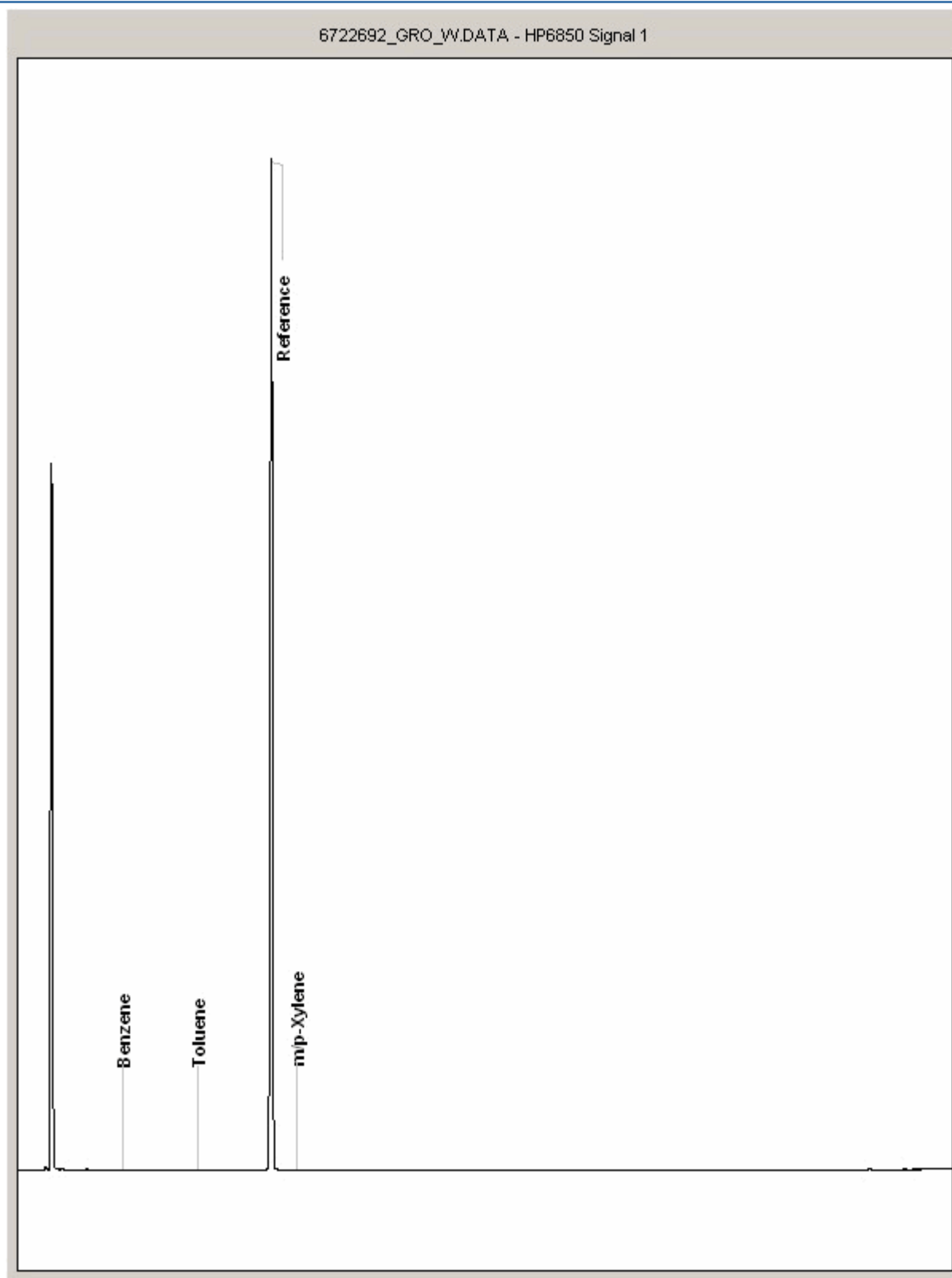
Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6722692
Sample ID : BH 104

Depth : 2.50





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

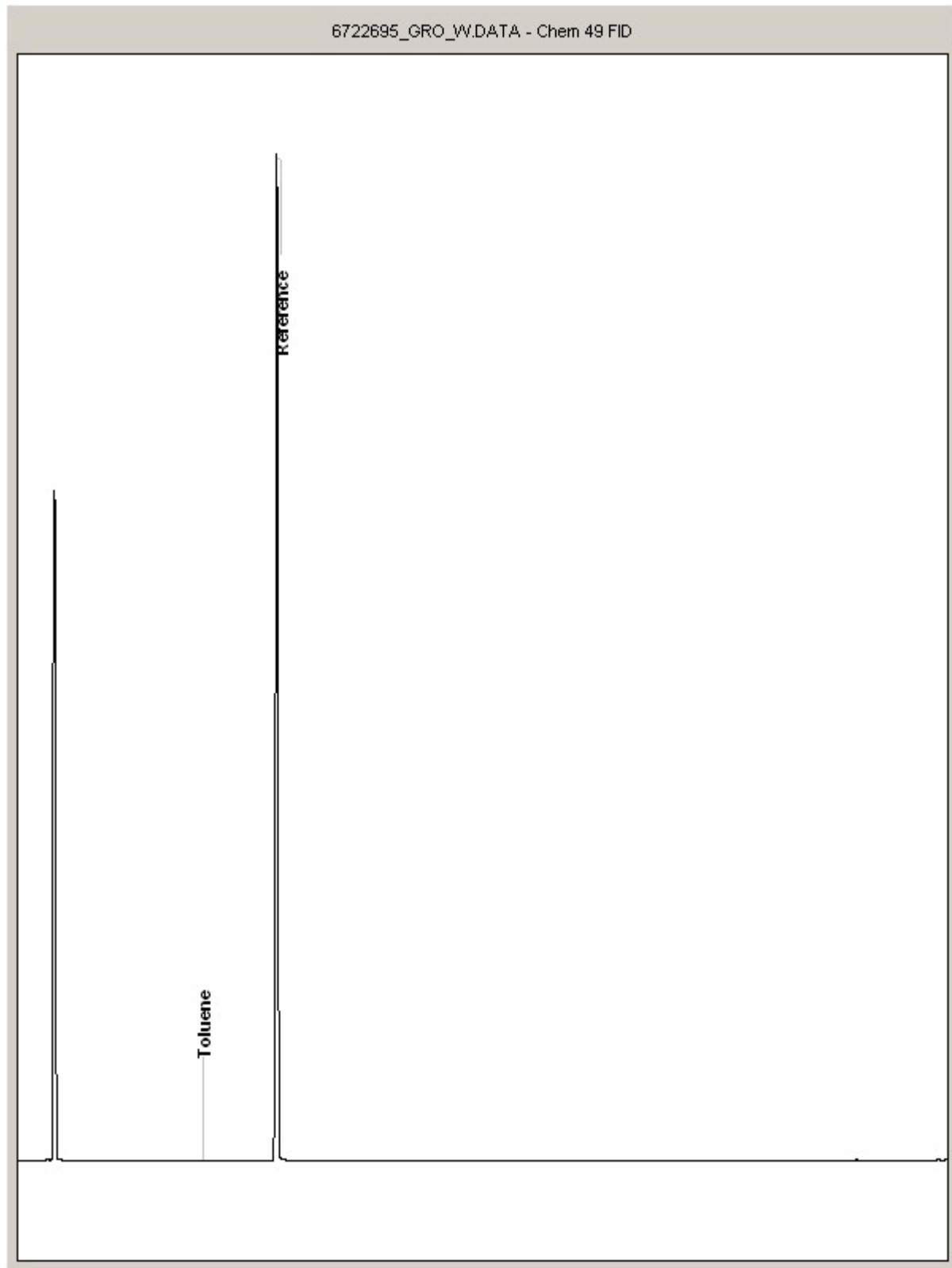
Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6722695
Sample ID : BH 104

Depth : 2.50





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

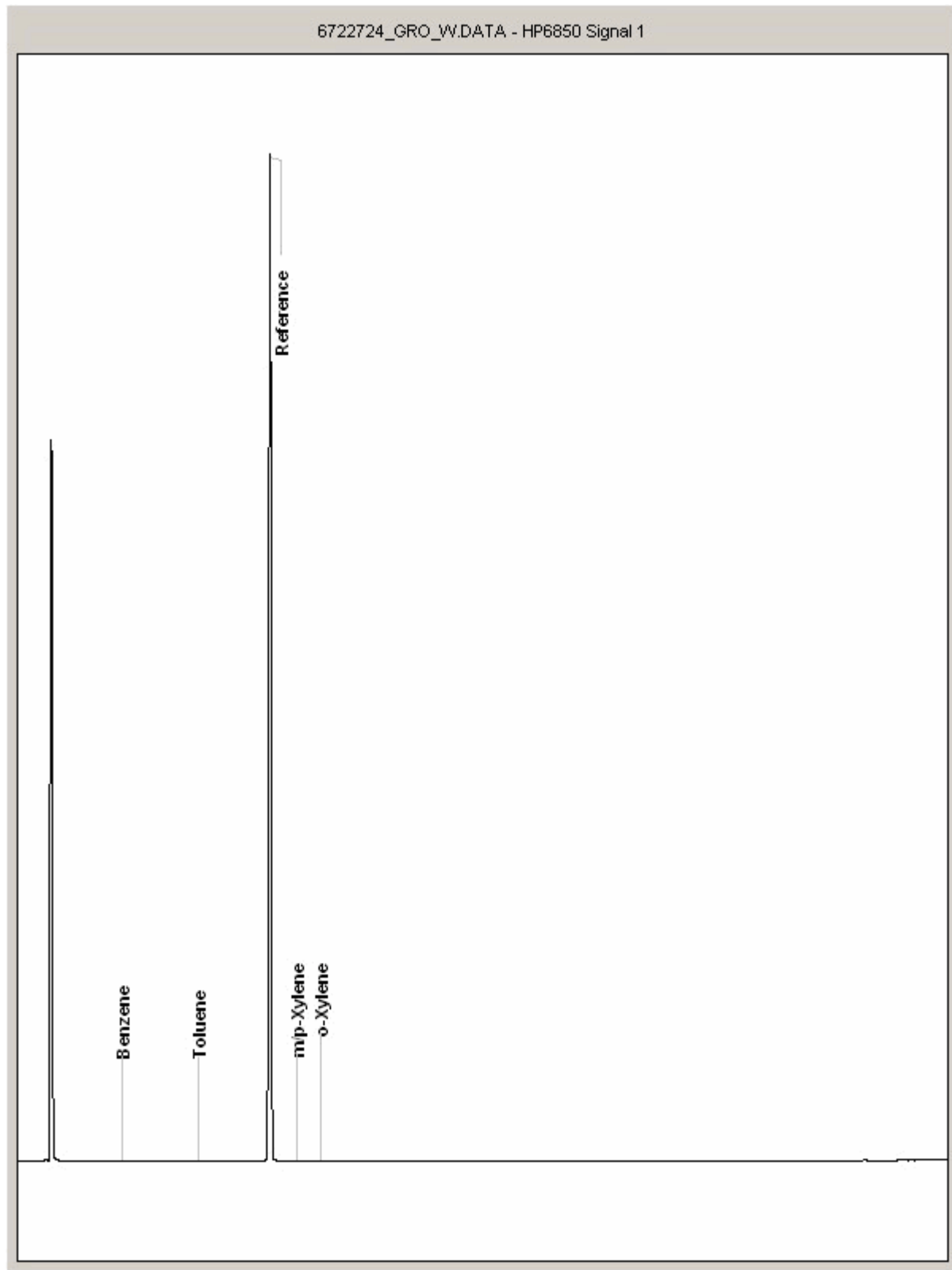
Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6722724
Sample ID : BH 105

Depth : 3.00





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

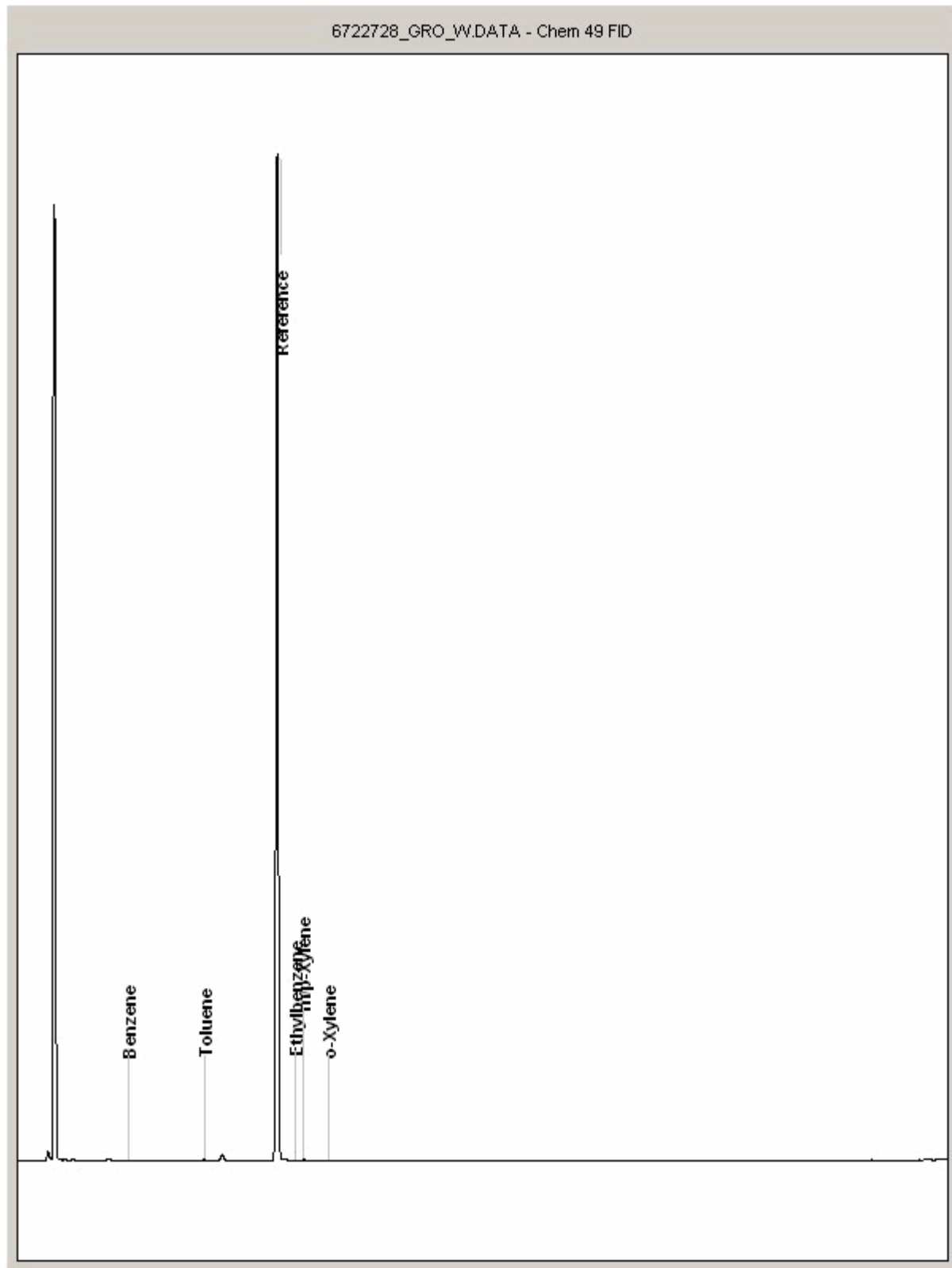
Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6722728
Sample ID : BH 103

Depth : 0.50 - 3.00





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

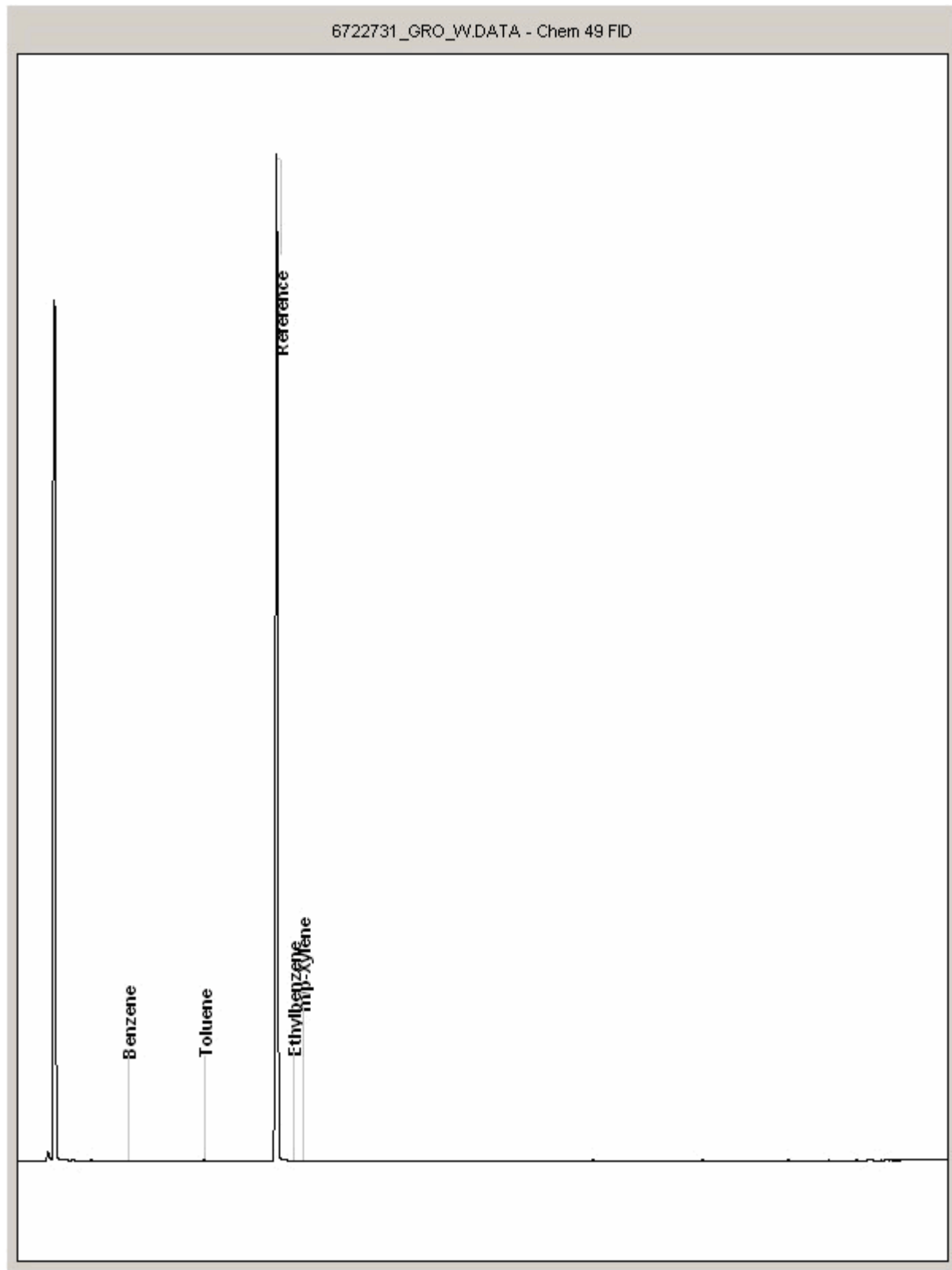
Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6722731
Sample ID : BH 104

Depth : 3.50





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

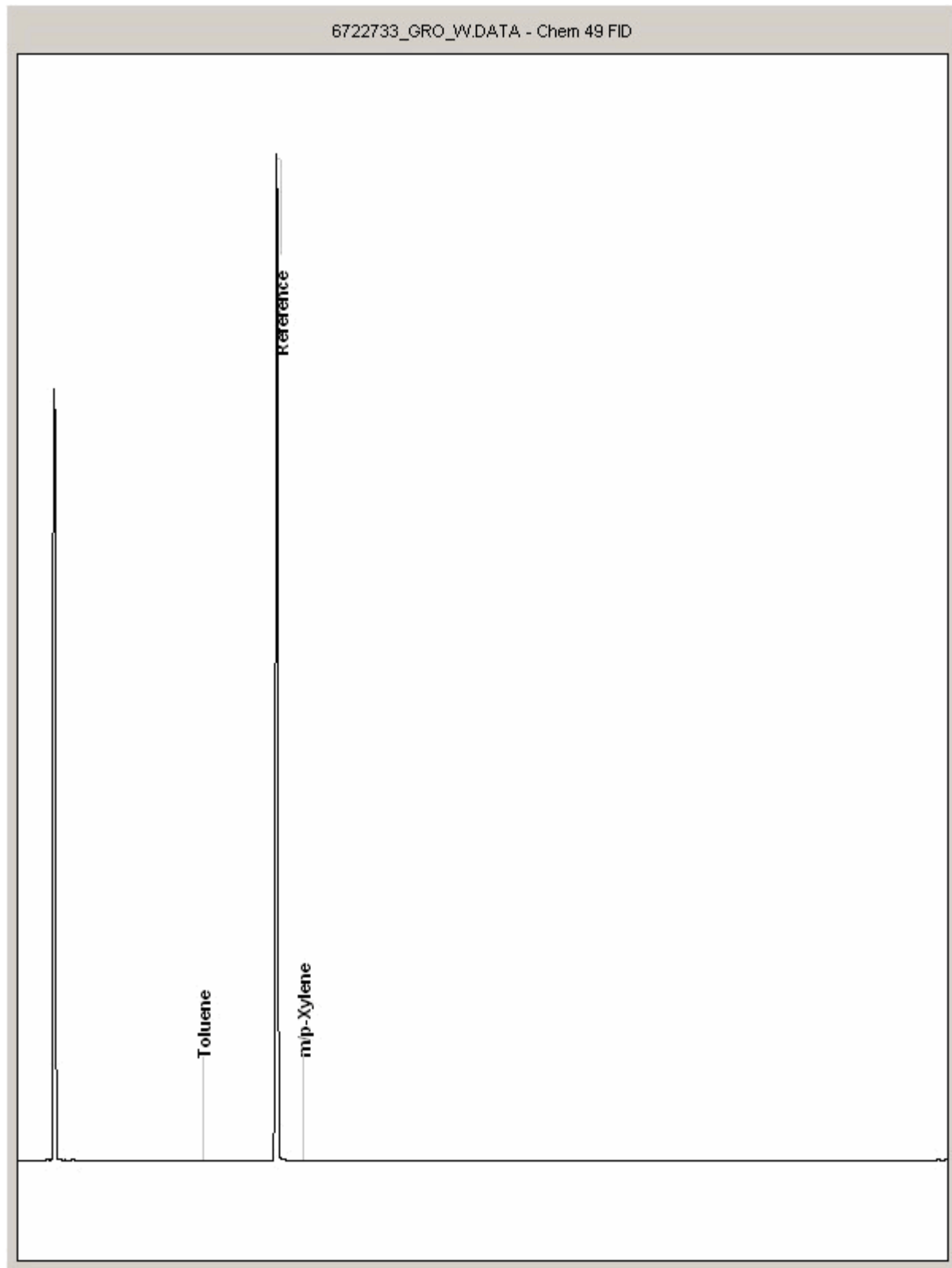
Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6722733
Sample ID : BH 105

Depth : 4.50





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

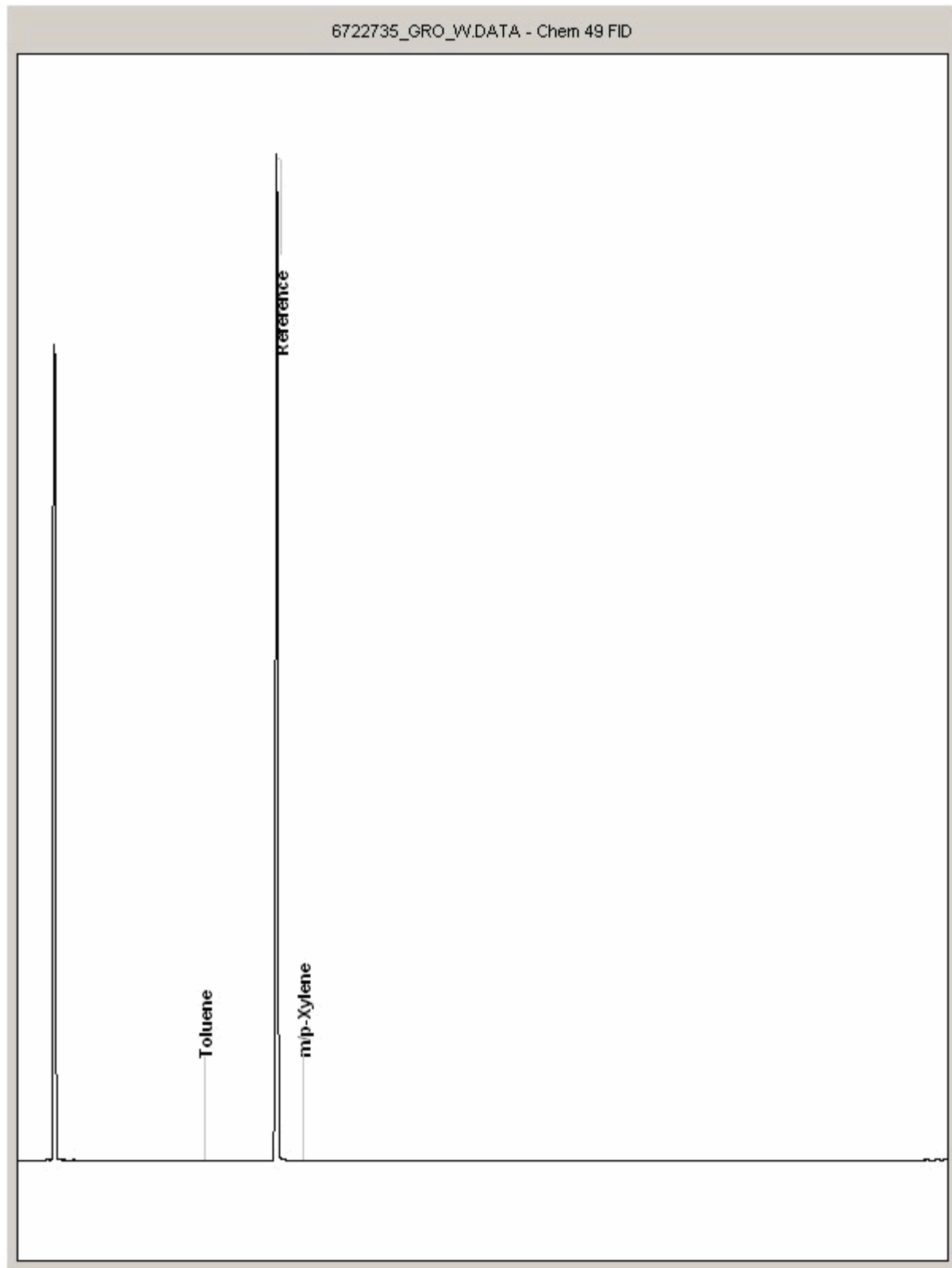
Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6722735
Sample ID : BH 104

Depth : 4.80





SDG: 121217-21
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

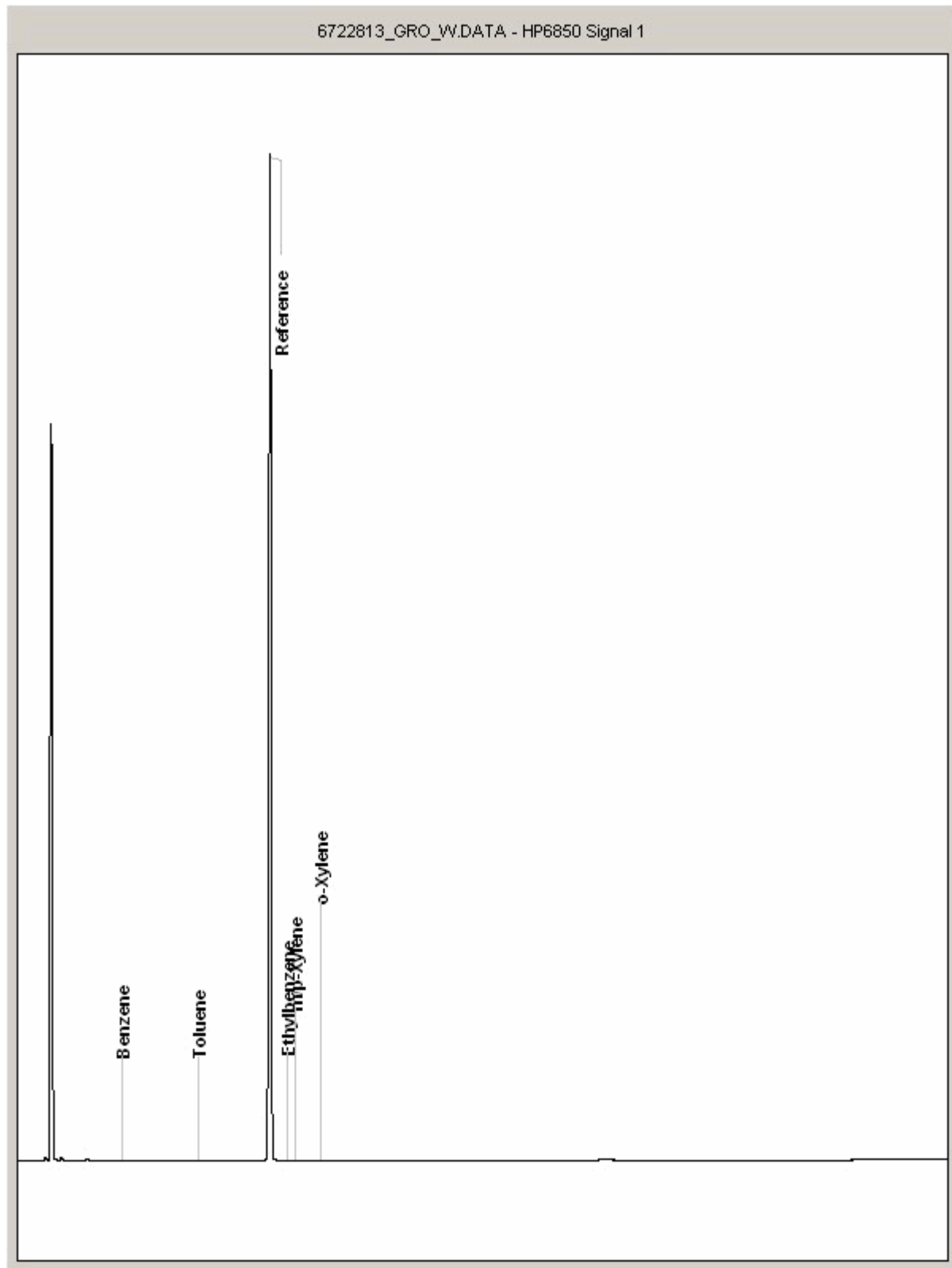
Order Number: R/PDEMEDINA.9
Report Number: 207731
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6722813
Sample ID : BH 103

Depth : 3.00 - 7.50





CERTIFICATE OF ANALYSIS

SDG:	121217-21	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	207731
Client Reference:		Attention:	Antony Platt	Superseded Report:	

Appendix
General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.
2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.
4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.
7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.
8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
9. NDP -No determination possible due to insufficient/unsuitable sample.
10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.
11. Results relate only to the items tested.
12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.
13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.
14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).
16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).
17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.
22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill /made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
§	Sampled on date not provided
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than :
-
Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Mayer Brown Ltd
Lion House
Oriental Road
Woking
Surrey
GU22 8AR

Attention: Antony Platt

CERTIFICATE OF ANALYSIS

Date: 10 January 2013
Customer: H_MAYERBROW_WOK
Sample Delivery Group (SDG): 121220-104
Your Reference:
Location: Medina
Report No: 208101

We received 11 samples on Thursday December 20, 2012 and 11 of these samples were scheduled for analysis which was completed on Thursday January 10, 2013. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan

Operations Manager





SDG:	121220-104	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208101
Client Reference:		Attention:	Antony Platt	Superseded Report:	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
6700145	BH106		0.50	17/12/2012
6700147	BH106		1.00 - 6.00	17/12/2012
6700149	BH106		6.00 - 7.00	17/12/2012
6700151	BH107		0.50	17/12/2012
6700153	BH107		2.50 - 2.90	17/12/2012
6700154	BH107		3.80 - 8.00	17/12/2012
6700156	BH108		0.50	17/12/2012
6700160	BH108		1.10 - 6.00	17/12/2012
6700158	BH108		3.60	17/12/2012
6700161	BH109		0.50	17/12/2012
6700162	BH109		2.10 - 6.00	17/12/2012

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

SOLID Results Legend <div> <div>X</div> Test </div> <div> <div>N</div> No Determination Possible </div>	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container	
	6700145		BH106				0.50		250g Amber Jar (AL 400g Tub (ALE214) 250g Amber Jar (AL	
	6700147		BH106				1.00 - 6.00		60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	
	6700149		BH106				6.00 - 7.00		1kg TUB 250g Amber Jar (AL	
	6700151		BH107				0.50		60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	
	6700153		BH107				2.50 - 2.90		250g Amber Jar (AL 1kg TUB	
	6700154		BH107				3.80 - 8.00		250g Amber Jar (AL 1kg TUB	
	6700156		BH108				0.50		60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	
	6700158		BH108				3.60		1kg TUB	
	6700160		BH108				1.10 - 6.00		250g Amber Jar (AL 250g Amber Jar (AL	
	6700161		BH109				0.50		60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	
	6700162		BH109				2.10 - 6.00		1kg TUB 250g Amber Jar (AL	
Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 6								
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 6								
Ammonium Soil by Titration	All	NDPs: 0 Tests: 4								
Anions by Kone (soil)	All	NDPs: 0 Tests: 4								
Anions by Kone (w)	All	NDPs: 0 Tests: 6								
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 5								
Boron Water Soluble	All	NDPs: 0 Tests: 4								
CEN 2:1 Readings	All	NDPs: 0 Tests: 6								
CEN 8:1 Readings	All	NDPs: 0 Tests: 6								
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 10								
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 6								
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 6								
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 4								
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 6								
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 4								



CERTIFICATE OF ANALYSIS

SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

SOLID Results Legend <div> <div>X</div> Test </div> <div> <div>N</div> No Determination Possible </div>	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container	
	6700145		BH106				0.50		250g Amber Jar (AL)	
	6700147		BH106				1.00 - 6.00		60g VOC (ALE215)	
	6700149		BH106				6.00 - 7.00		400g Tub (ALE214)	
	6700151		BH107				0.50		250g Amber Jar (AL)	
GRO by GC-FID (S)	6700153		BH107				2.50 - 2.90		60g VOC (ALE215)	
	6700154		BH107				3.80 - 8.00		400g Tub (ALE214)	
GRO by GC-FID (W)	6700156		BH108				0.50		250g Amber Jar (AL)	
	6700158		BH108				1.10 - 6.00		60g VOC (ALE215)	
Low Level Phenols by HPLC (W)	6700160		BH108				3.60		400g Tub (ALE214)	
	6700161		BH109				0.50		250g Amber Jar (AL)	
Mercury Unfiltered	6700162		BH109				2.10 - 6.00		250g Amber Jar (AL)	
Metals by iCap-OES (Soil)									1kg TUB	
									60g VOC (ALE215)	
									400g Tub (ALE214)	
									250g Amber Jar (AL)	
									250g Amber Jar (AL)	
									1kg TUB	
									60g VOC (ALE215)	
									400g Tub (ALE214)	
									250g Amber Jar (AL)	
									250g Amber Jar (AL)	
									1kg TUB	
									60g VOC (ALE215)	



CERTIFICATE OF ANALYSIS

SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

SOLID Results Legend <div> <div>X</div> Test </div> <div> <div>N</div> No Determination Possible </div>	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container	
	6700145		BH106				0.50		250g Amber Jar (AL)	
	6700147		BH106				1.00 - 6.00		60g VOC (ALE215)	
	6700149		BH106				6.00 - 7.00		400g Tub (ALE214)	
	6700151		BH107				0.50		250g Amber Jar (AL)	
	6700153		BH107				2.50 - 2.90		60g VOC (ALE215)	
	6700154		BH107				3.80 - 8.00		400g Tub (ALE214)	
	6700156		BH108				0.50		250g Amber Jar (AL)	
	6700158		BH108				3.60		60g VOC (ALE215)	
	6700160		BH108				1.10 - 6.00		400g Tub (ALE214)	
	6700161		BH109				0.50		250g Amber Jar (AL)	
	6700162		BH109				2.10 - 6.00		60g VOC (ALE215)	
Metals by iCap-OES (Soil)	Selenium		NDPs: 0 Tests: 4							
Zinc	Zinc		NDPs: 0 Tests: 4							
PAH by GCMS	All		NDPs: 0 Tests: 4							
PAH Spec MS - Aqueous (W)	All		NDPs: 0 Tests: 6							
pH	All		NDPs: 0 Tests: 4							
pH Value	All		NDPs: 0 Tests: 6							
Phenols by HPLC (S)	All		NDPs: 0 Tests: 4							
Sample description	All		NDPs: 0 Tests: 10							
Total Organic Carbon	All		NDPs: 1 Tests: 3							
Total Organic Carbon (Asb)	All		NDPs: 0 Tests: 1							
TPH CWG (W)	All		NDPs: 0 Tests: 6							
TPH CWG GC (S)	All		NDPs: 0 Tests: 4							



SDG:	121220-104	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208101
Client Reference:		Attention:	Antony Platt	Superseded Report:	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
6700145	BH106	0.50	Dark Brown	Clay	<0.063 mm	Stones	Brick
6700147	BH106	1.00 - 6.00	Dark Brown	Silty Clay	0.063 - 0.1 mm	Vegetation	Stones
6700149	BH106	6.00 - 7.00	Light Brown	Clay	0.063 - 0.1 mm	None	Stones
6700151	BH107	0.50	Light Brown	Silty Clay	0.063 - 0.1 mm	Stones	None
6700153	BH107	2.50 - 2.90	Dark Brown	Loamy Sand	0.1 - 2 mm	Vegetation	Crushed Brick
6700154	BH107	3.80 - 8.00	Dark Brown	Loamy Sand	0.1 - 2 mm	Fibres	Crushed Brick
6700156	BH108	0.50	Dark Brown	Sandy Loam	0.1 - 2 mm	Glass & Stones	Brick
6700160	BH108	1.10 - 6.00	Grey	N/A	0.1 - 2 mm	N/A	None
6700161	BH109	0.50	Light Brown	Silty Clay	0.063 - 0.1 mm	Stones	None
6700162	BH109	2.10 - 6.00	Dark Brown	Loamy Sand	0.1 - 2 mm	Glass & Stones	Crushed Brick

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Page 7 of 87

CERTIFICATE OF ANALYSIS

SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

PAH by GCMS

[illegible]



CERTIFICATE OF ANALYSIS

SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

TPH CWG (S)

Results Legend			Customer Sample R		BH106	BH107	BH108	BH109		
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.50	0.50	0.50	0.50		
M	mCERTS accredited.				Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
aq	Aqueous / settled sample.				17/12/2012	17/12/2012	17/12/2012	17/12/2012		
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.				20/12/2012	20/12/2012	20/12/2012	20/12/2012		
*	Subcontracted test.				121220-104	121220-104	121220-104	121220-104		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				6700145	6700151	6700156	6700161		
(F)	Trigger breach confirmed									
1-48*5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
GRO Surrogate % recovery**	%	TM089			97	83	87	97		
GRO >C5-C12	<0.044 mg/kg	TM089			<0.044	<0.044	<0.044	<0.044		
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089			<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.005 @ #		
Benzene	<0.01 mg/kg	TM089			<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M		
Toluene	<0.002 mg/kg	TM089			<0.002 @ M	<0.002 @ M	0.0057 @ M	<0.002 @ M		
Ethylbenzene	<0.003 mg/kg	TM089			<0.003 @ M	<0.003 @ M	0.00342 @ M	<0.003 @ M		
m,p-Xylene	<0.006 mg/kg	TM089			<0.006 @ M	<0.006 @ M	0.00912 @ M	<0.006 @ M		
o-Xylene	<0.003 mg/kg	TM089			<0.003 @ M	<0.003 @ M	<0.003 @ M	<0.003 @ M		
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089			<0.009	<0.009	0.00912	<0.009		
sum of detected BTEX by GC	<0.024 mg/kg	TM089			<0.024	<0.024	<0.024	<0.024		
Aliphatics >C5-C6	<0.01 mg/kg	TM089			<0.01	<0.01	<0.01	<0.01		
Aliphatics >C6-C8	<0.01 mg/kg	TM089			<0.01	<0.01	<0.01	<0.01		
Aliphatics >C8-C10	<0.01 mg/kg	TM089			<0.01	<0.01	<0.01	<0.01		
Aliphatics >C10-C12	<0.01 mg/kg	TM089			<0.01	<0.01	<0.01	<0.01		
Aliphatics >C12-C16	<0.1 mg/kg	TM173			18.7	3.41	4.7	2.25		
Aliphatics >C16-C21	<0.1 mg/kg	TM173			18.9	2.43	10.7	1.44		
Aliphatics >C21-C35	<0.1 mg/kg	TM173			16.7	7.09	88.4	13.2		
Aliphatics >C35-C44	<0.1 mg/kg	TM173			2.05	1.05	25.5	4.27		
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173			56.3	14	129	21.2		
Aromatics >EC5-EC7	<0.01 mg/kg	TM089			<0.01	<0.01	<0.01	<0.01		
Aromatics >EC7-EC8	<0.01 mg/kg	TM089			<0.01	<0.01	<0.01	<0.01		
Aromatics >EC8-EC10	<0.01 mg/kg	TM089			<0.01	<0.01	0.0148	<0.01		
Aromatics >EC10-EC12	<0.01 mg/kg	TM089			<0.01	<0.01	<0.01	<0.01		
Aromatics >EC12-EC16	<0.1 mg/kg	TM173			8.5	2.02	3	2.6		
Aromatics >EC16-EC21	<0.1 mg/kg	TM173			15.7	2.05	19.9	15.5		
Aromatics >EC21-EC35	<0.1 mg/kg	TM173			61.5	7.94	102	66.6		
Aromatics >EC35-EC44	<0.1 mg/kg	TM173			19.1	3.73	39.7	29.5		
Aromatics >EC40-EC44	<0.1 mg/kg	TM173			6.8	1.33	14.8	10.8		
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173			105	15.7	165	114		
Total Aliphatics >C5-35	<0.1 mg/kg	TM173			54.2	12.9	104	16.9		
Total Aromatics >C5-35	<0.1 mg/kg	TM173			85.7	12	125	84.7		
Total Aliphatics & Aromatics >C5-35	<0.1 mg/kg	TM173			140	24.9	229	102		

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

11:58:36 10/01/2013



SDG:	121220-104	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208101
Client Reference:		Attention:	Antony Platt	Superseded Report:	

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH106 0.50 SOLID 17/12/2012 00:00:00 121220-104 6700145 TM048	07/01/13	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH107 0.50 SOLID 17/12/2012 00:00:00 121220-104 6700151 TM048	07/01/13	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH108 0.50 SOLID 17/12/2012 00:00:00 121220-104 6700156 TM048	07/01/13	Lauren Sargeant	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH108 3.60 SOLID 17/12/2012 00:00:00 121220-104 6700158 TM048	10/01/13	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH109 0.50 SOLID 17/12/2012 00:00:00 121220-104 6700161 TM048	07/01/13	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



SDG:	121220-104	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208101
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.244	Moisture Content Ratio (%)	39.6
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	71.6
Particle Size <4mm	>95%		

<div>Case</div> <div>SDG121220-104</div> <div>Lab Sample Number(s)6700147</div> <div>Sampled Date17-Dec-2012</div> <div>Customer Sample Ref.BH106</div> <div>Depth (m)1.00 - 6.00</div> <div>Solid Waste Analysis</div> <div>Total Organic Carbon (%) -</div> <div>Loss on Ignition (%) -</div> <div>Sum of BTEX (mg/kg) -</div> <div>Sum of 7 PCBs (mg/kg) -</div> <div>Mineral Oil (mg/kg) -</div> <div>PAH Sum of 17 (mg/kg) -</div> <div>pH (pH Units) -</div> <div>ANC to pH 6 (mol/kg) -</div> <div>ANC to pH 4 (mol/kg) -</div>		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
Arsenic	0.00949	0.00701	0.019	0.0731	0.5	2	25
Barium	0.00464	0.00127	0.00929	0.0168	20	100	300
Cadmium	<0.0001	<0.0001	<0.0002	<0.001	0.04	1	5
Chromium	0.00434	0.00127	0.00869	0.0164	0.5	10	70
Copper	0.0105	0.00421	0.021	0.0496	2	50	100
Mercury Dissolved (CVAf)	-	-	-	-	0.01	0.2	2
Molybdenum	0.0108	0.00117	0.0215	0.0233	0.5	10	30
Nickel	0.00201	0.000534	0.00403	0.00711	0.4	10	40
Lead	0.000069	0.000042	0.000138	0.000453	0.5	10	50
Antimony	0.00116	0.000479	0.00233	0.00561	0.06	0.7	5
Selenium	0.00446	0.00123	0.00894	0.0161	0.1	0.5	7
Zinc	0.000565	<0.00041	0.00113	<0.0041	4	50	200
Chloride	15.7	-	31.4	-	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	51.5	5.6	103	111	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	-	-	-	-	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information	2:1	8:1
Date Prepared	27-Dec-2012	02-Jan-2013
pH (pH Units)	9.871	10.360
Conductivity (µS/cm)	244.00	11.20
Temperature (°C)	20.90	18.90
Volume Leachant (Litres)	0.281	1.400
Volume of Eluate VE1 (Litres)	0.262	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
10/01/2013 11:58:57



CERTIFICATE OF ANALYSIS

SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg) 0.244

Mass of dry sample (kg) 0.175

Particle Size <4mm >95%

Site Location

Medina

Moisture Content Ratio (%) 39.6

Dry Matter Content Ratio (%) 71.6

Case

SDG 121220-104

Lab Sample Number(s) 6700147

Sampled Date 17-Dec-2012

Customer Sample Ref. BH106

Depth (m) 1.00 - 6.00

Landfill Waste Acceptance
Criteria LimitsInert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Solid Waste Analysis

Total Organic Carbon (%) -

Loss on Ignition (%) -

Sum of BTEX (mg/kg) -

Sum of 7 PCBs (mg/kg) -

Mineral Oil (mg/kg) -

PAH Sum of 17 (mg/kg) -

pH (pH Units) -

ANC to pH 6 (mol/kg) -

ANC to pH 4 (mol/kg) -

Eluate Analysis

Eluate Analysis	C ₂	Conc ⁿ in 2:1 eluate	C ₈	Conc ⁿ in 8:1 eluate	A ₂	2:1 conc ⁿ leached	A ₂₋₁₀	Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	mg/l			mg/kg					
Mercury Unfiltered	<0.00002	<0.00002	<0.00002	<0.00002	<0.00004	<0.0002	-	-	-
Total Ammonia as NH3	0.381	<0.2	0.763	<2	-	-	-	-	-
Phenol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-	-	-
Total Ammonium as NH4	0.404	<0.3	0.808	<3	-	-	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.1	<0.5	-	-	-	-	-
Cresols by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-	-	-
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	-	-	-	-	-
Nitrate as N	1.15	-	2.31	-	-	-	-	-	-
Xylenols by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-	-	-
Napthol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-	-	-
2,3,5 Trimethyl-Phenol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-	-	-
Boron	0.046	0.0234	0.0922	0.261	-	-	-	-	-
Total Alkalinity Filtered as CaCO3	55	55	110	550	-	-	-	-	-
Phenols Total of 5 Speciated by HPLC (W)	<0.00064	<0.00064	<0.00128	<0.0064	-	-	-	-	-
PAH Spec MS - Aqueous (W)									
Naphthalene by GCMS	<0.0001	<0.0001	<0.0002	<0.001	-	-	-	-	-
Acenaphthene by GCMS	0	<0.000015	0.000132	<0.00015	-	-	-	-	-
Acenaphthylene by GCMS	<0.000011	<0.000011	<0.000022	<0.00011	-	-	-	-	-
Fluoranthene by GCMS	0	0.0000249	0.000112	0.000288	-	-	-	-	-
Anthracene by GCMS	0	<0.000015	0.0000305	<0.00015	-	-	-	-	-
Phenanthrene by GCMS	<0.000022	<0.000022	<0.000044	<0.00022	-	-	-	-	-
Fluorene by GCMS	<0.000014	<0.000014	<0.000028	<0.00014	-	-	-	-	-
Chrysene by GCMS	<0.000013	<0.000013	<0.000026	<0.00013	-	-	-	-	-

Leach Test Information

	2:1	8:1
Date Prepared	27-Dec-2012	02-Jan-2013
pH (pH Units)	9.871	10.360
Conductivity (µS/cm)	244.00	11.20
Temperature (°C)	20.90	18.90
Volume Leachant (Litres)	0.281	1.400
Volume of Eluate VE1 (Litres)	0.262	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

10/01/2013 11:58:57

11:58:36 10/01/2013



CERTIFICATE OF ANALYSIS

SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.244	Moisture Content Ratio (%)	39.6
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	71.6
Particle Size <4mm	>95%		

Case	Landfill Waste Acceptance Criteria Limits		
SDG	121220-104		
Lab Sample Number(s)	6700147		
Sampled Date	17-Dec-2012		
Customer Sample Ref.	BH106		
Depth (m)	1.00 - 6.00		
Solid Waste Analysis			
Total Organic Carbon (%)	-		
Loss on Ignition (%)	-		
Sum of BTEX (mg/kg)	-		
Sum of 7 PCBs (mg/kg)	-		
Mineral Oil (mg/kg)	-		
PAH Sum of 17 (mg/kg)	-		
pH (pH Units)	-		
ANC to pH 6 (mol/kg)	-		
ANC to pH 4 (mol/kg)	-		

Eluate Analysis	C ₂ Conc ⁿ in 2:1 eluate	C ₈ Conc ⁿ in 8:1 eluate	A ₂ 2:1 conc ⁿ leached	A ₂₋₁₀ Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
PAH Spec MS - Aqueous (W)							
Pyrene by GCMS	0	0.0000821	0.000166	0.000822	-	-	-
Benz(a)anthracene by GCMS	<0.000017	<0.000017	<0.000034	<0.00017	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000023	<0.000023	<0.000046	<0.00023	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000027	<0.000027	<0.000054	<0.00027	-	-	-
Benzo(a)pyrene by GCMS	<0.000009	<0.000009	<0.000018	<0.00009	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Benzo(ghi)perylene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000014	<0.000014	<0.000028	<0.00014	-	-	-
PAH 16 EPA Total by GCMS	<0.000247	<0.000247	<0.000494	<0.00247	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	-	-	-	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.00601	<0.03	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics & Aromatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	27-Dec-2012	02-Jan-2013
pH (pH Units)	9.871	10.360
Conductivity (µS/cm)	244.00	11.20
Temperature (°C)	20.90	18.90
Volume Leachant (Litres)	0.281	1.400
Volume of Eluate VE1 (Litres)	0.262	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
10/01/2013 11:58:57

11:58:36 10/01/2013



SDG:	121220-104	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208101
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.244	Moisture Content Ratio (%)	39.6
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	71.6
Particle Size <4mm	>95%		

<div>Case</div> <div>SDG121220-104</div> <div>Lab Sample Number(s)6700147</div> <div>Sampled Date17-Dec-2012</div> <div>Customer Sample Ref.BH106</div> <div>Depth (m)1.00 - 6.00</div> <div>Solid Waste Analysis</div> <div>Total Organic Carbon (%) -</div> <div>Loss on Ignition (%) -</div> <div>Sum of BTEX (mg/kg) -</div> <div>Sum of 7 PCBs (mg/kg) -</div> <div>Mineral Oil (mg/kg) -</div> <div>PAH Sum of 17 (mg/kg) -</div> <div>pH (pH Units) -</div> <div>ANC to pH 6 (mol/kg) -</div> <div>ANC to pH 4 (mol/kg) -</div>		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
TPH CWG (W)							
Benzene by GC	<0.007	<0.007	<0.014	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.00801	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.01	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.016	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.00601	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.022	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.056	<0.28	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics >C5-C35 Aqueous	<0.01	-	<0.02	-	-	-	-
Total Aromatics >C6-C35 Aqueous	<0.01	-	<0.02	-	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	-	<0.02	-	-	-	-
Total Aliphatics C5-C12	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aromatics C6-C12	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	27-Dec-2012	02-Jan-2013
pH (pH Units)	9.871	10.360
Conductivity (µS/cm)	244.00	11.20
Temperature (°C)	20.90	18.90
Volume Leachant (Litres)	0.281	1.400
Volume of Eluate VE1 (Litres)	0.262	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
10/01/2013 11:58:57



SDG:	121220-104	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208101
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.248	Moisture Content Ratio (%)	41.5
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	70.7
Particle Size <4mm	>95%		

<div>Case</div> <div>SDG121220-104</div> <div>Lab Sample Number(s)6700149</div> <div>Sampled Date17-Dec-2012</div> <div>Customer Sample Ref.BH106</div> <div>Depth (m)6.00 - 7.00</div>		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Solid Waste Analysis				
Total Organic Carbon (%)		-	-	-
Loss on Ignition (%)		-	-	-
Sum of BTEX (mg/kg)		-	-	-
Sum of 7 PCBs (mg/kg)		-	-	-
Mineral Oil (mg/kg)		-	-	-
PAH Sum of 17 (mg/kg)		-	-	-
pH (pH Units)		-	-	-
ANC to pH 6 (mol/kg)		-	-	-
ANC to pH 4 (mol/kg)		-	-	-

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
Arsenic	0.00311	0.00126	0.0062	0.0145	0.5	2	25
Barium	0.0926	0.0445	0.185	0.493	20	100	300
Cadmium	<0.0001	<0.0001	<0.0002	<0.001	0.04	1	5
Chromium	0.00146	0.00148	0.00292	0.0147	0.5	10	70
Copper	0.0122	0.0028	0.0243	0.0374	2	50	100
Mercury Dissolved (CVAf)	-	-	-	-	0.01	0.2	2
Molybdenum	0.00853	0.00528	0.017	0.056	0.5	10	30
Nickel	0.00323	0.00169	0.00646	0.0184	0.4	10	40
Lead	0.000454	0.00466	0.000907	0.0424	0.5	10	50
Antimony	0.00149	0.00155	0.00298	0.0154	0.06	0.7	5
Selenium	0.00429	0.000851	0.00856	0.0119	0.1	0.5	7
Zinc	0.00578	0.00438	0.0115	0.0452	4	50	200
Chloride	93	6.6	186	152	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	78.4	32.2	157	368	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	-	-	-	-	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information	2:1	8:1
Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	8.599	7.410
Conductivity (µS/cm)	642.00	205.00
Temperature (°C)	19.70	17.10
Volume Leachant (Litres)	0.277	1.400
Volume of Eluate VE1 (Litres)	0.130	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
10/01/2013 11:58:57



CERTIFICATE OF ANALYSIS

SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg) 0.248

Mass of dry sample (kg) 0.175

Particle Size <4mm >95%

Site Location

Medina

Moisture Content Ratio (%) 41.5

Dry Matter Content Ratio (%) 70.7

Case

SDG 121220-104

Lab Sample Number(s) 6700149

Sampled Date 17-Dec-2012

Customer Sample Ref. BH106

Depth (m) 6.00 - 7.00

Landfill Waste Acceptance
Criteria LimitsInert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Solid Waste Analysis

Total Organic Carbon (%) -

Loss on Ignition (%) -

Sum of BTEX (mg/kg) -

Sum of 7 PCBs (mg/kg) -

Mineral Oil (mg/kg) -

PAH Sum of 17 (mg/kg) -

pH (pH Units) -

ANC to pH 6 (mol/kg) -

ANC to pH 4 (mol/kg) -

Eluate Analysis

Eluate Analysis	C ₂	Conc ⁿ in 2:1 eluate	C ₈	Conc ⁿ in 8:1 eluate	A ₂	2:1 conc ⁿ leached	A ₂₋₁₀	Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	mg/l			mg/kg					
Mercury Unfiltered	<0.00002		<0.00002		<0.00004		<0.0002		- - -
Total Ammonia as NH3	3.1		1.73		6.18		18.7		- - -
Phenol by HPLC (W)	<0.0005		<0.0005		<0.000999		<0.005		- - -
Total Ammonium as NH4	3.28		1.84		6.55		19.8		- - -
Total Cyanide (W)	<0.05		<0.05		<0.0999		<0.5		- - -
Cresols by HPLC (W)	<0.0005		<0.0005		<0.000999		<0.005		- - -
Beryllium	<0.00007		<0.00007		<0.00014		<0.0007		- - -
Nitrate as N	<0.0677		0.0905		<0.135		0.814		- - -
Xylenols by HPLC (W)	<0.0005		<0.0005		<0.000999		<0.005		- - -
Napthol by HPLC (W)	<0.0005		<0.0005		<0.000999		<0.005		- - -
2,3,5 Trimethyl-Phenol by HPLC (W)	<0.0005		<0.0005		<0.000999		<0.005		- - -
Boron	0.0666		0.0315		0.133		0.35		- - -
Total Alkalinity Filtered as CaCO3	140		85		280		905		- - -
Phenols Total of 5 Speciated by HPLC (W)	<0.00064		<0.00064		<0.00128		<0.0064		- - -
PAH Spec MS - Aqueous (W)									
Naphthalene by GCMS	<0.0001		<0.0001		<0.0002		<0.001		- - -
Acenaphthene by GCMS	0		0.0000161		0.0000513		0.000171		- - -
Acenaphthylene by GCMS	<0.000011		<0.000011		<0.000022		<0.00011		- - -
Fluoranthene by GCMS	<0.000017		0.0000626		<0.000034		0.000563		- - -
Anthracene by GCMS	<0.000015		0.0000253		<0.00003		0.000228		- - -
Phenanthrene by GCMS	<0.000022		0.0000876		<0.000044		0.000788		- - -
Fluorene by GCMS	<0.000014		0.0000153		<0.000028		<0.00014		- - -
Chrysene by GCMS	<0.000013		<0.000013		<0.000026		<0.00013		- - -

Leach Test Information

	2:1	8:1
Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	8.599	7.410
Conductivity (µS/cm)	642.00	205.00
Temperature (°C)	19.70	17.10
Volume Leachant (Litres)	0.277	1.400
Volume of Eluate VE1 (Litres)	0.130	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

10/01/2013 11:58:57

11:58:36 10/01/2013



CERTIFICATE OF ANALYSIS

SDG:	121220-104	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208101
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.248	Moisture Content Ratio (%)	41.5
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	70.7
Particle Size <4mm	>95%		

Case SDG121220-104 Lab Sample Number(s)6700149 Sampled Date17-Dec-2012 Customer Sample Ref.BH106 Depth (m)6.00 - 7.00		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)	-	-	-	
Loss on Ignition (%)	-	-	-	
Sum of BTEX (mg/kg)	-	-	-	
Sum of 7 PCBs (mg/kg)	-	-	-	
Mineral Oil (mg/kg)	-	-	-	
PAH Sum of 17 (mg/kg)	-	-	-	
pH (pH Units)	-	-	-	
ANC to pH 6 (mol/kg)	-	-	-	
ANC to pH 4 (mol/kg)	-	-	-	

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
		mg/l		mg/kg			
PAH Spec MS - Aqueous (W)							
Pyrene by GCMS	<0.000015	0.0000607	<0.00003	0.000546	-	-	-
Benz(a)anthracene by GCMS	<0.000017	<0.000017	<0.000034	<0.00017	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000023	<0.000023	<0.000046	<0.00023	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000027	<0.000027	<0.0000539	<0.00027	-	-	-
Benzo(a)pyrene by GCMS	<0.000009	<0.000009	<0.000018	<0.00009	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Benzo(ghi)perylene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000014	<0.000014	<0.000028	<0.00014	-	-	-
PAH 16 EPA Total by GCMS	<0.000247	0.000268	<0.000494	<0.00247	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	-	-	-	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.00599	<0.03	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics & Aromatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	8.599	7.410
Conductivity (µS/cm)	642.00	205.00
Temperature (°C)	19.70	17.10
Volume Leachant (Litres)	0.277	1.400
Volume of Eluate VE1 (Litres)	0.130	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
10/01/2013 11:58:57



CERTIFICATE OF ANALYSIS

SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg) 0.248

Mass of dry sample (kg) 0.175

Particle Size <4mm >95%

Site Location

Medina

Moisture Content Ratio (%) 41.5

Dry Matter Content Ratio (%) 70.7

Case

SDG 121220-104

Lab Sample Number(s) 6700149

Sampled Date 17-Dec-2012

Customer Sample Ref. BH106

Depth (m) 6.00 - 7.00

Landfill Waste Acceptance
Criteria LimitsInert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Solid Waste Analysis

Total Organic Carbon (%) -

Loss on Ignition (%) -

Sum of BTEX (mg/kg) -

Sum of 7 PCBs (mg/kg) -

Mineral Oil (mg/kg) -

PAH Sum of 17 (mg/kg) -

pH (pH Units) -

ANC to pH 6 (mol/kg) -

ANC to pH 4 (mol/kg) -

Eluate Analysis

C₂Concⁿ in 2:1
eluateC₈Concⁿ in 8:1
eluateA₂2:1 concⁿ
leachedA₂₋₁₀Cumulative
concⁿ
leachedLimit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

TPH CWG (W)

	mg/l	mg/kg	
Benzene by GC	<0.007	<0.007	<0.014
Toluene by GC	<0.004	<0.004	<0.00799
Ethylbenzene by GC	<0.005	<0.005	<0.00999
m & p Xylene by GC	<0.008	<0.008	<0.016
o Xylene by GC	<0.003	<0.003	<0.00599
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.022
Sum of BTEX by GC	<0.028	<0.028	<0.0559
Aromatics >EC8 -EC10	<0.01	<0.01	<0.02
Aromatics >EC10-EC12	<0.01	<0.01	<0.02
Aromatics >EC12-EC16	<0.01	<0.01	<0.02
Aromatics >EC16-EC21	<0.01	<0.01	<0.02
Aromatics >EC21-EC35	<0.01	<0.01	<0.02
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.02
Total Aliphatics >C5-C35 Aqueous	<0.01	<0.01	-
Total Aromatics >C6-C35 Aqueous	<0.01	<0.01	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	-
Total Aliphatics C5-C12	<0.01	<0.01	<0.02
Total Aromatics C6-C12	<0.01	<0.01	<0.02

Leach Test Information

2:1

8:1

Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	8.599	7.410
Conductivity (µS/cm)	642.00	205.00
Temperature (°C)	19.70	17.10
Volume Leachant (Litres)	0.277	1.400
Volume of Eluate VE1 (Litres)	0.130	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

10/01/2013 11:58:57

11:58:36 10/01/2013



SDG:	121220-104	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208101
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.219	Moisture Content Ratio (%)	25.3
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	79.8
Particle Size <4mm	>95%		

<div>Case</div> <div>SDG121220-104</div> <div>Lab Sample Number(s)6700153</div> <div>Sampled Date17-Dec-2012</div> <div>Customer Sample Ref.BH107</div> <div>Depth (m)2.50 - 2.90</div> <div>Solid Waste Analysis</div> <div>Total Organic Carbon (%) -</div> <div>Loss on Ignition (%) -</div> <div>Sum of BTEX (mg/kg) -</div> <div>Sum of 7 PCBs (mg/kg) -</div> <div>Mineral Oil (mg/kg) -</div> <div>PAH Sum of 17 (mg/kg) -</div> <div>pH (pH Units) -</div> <div>ANC to pH 6 (mol/kg) -</div> <div>ANC to pH 4 (mol/kg) -</div>		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
Arsenic	0.00344	0.000895	0.00689	0.0128	0.5	2	25
Barium	0.367	0.108	0.734	1.47	20	100	300
Cadmium	0.000384	<0.0001	0.000769	<0.001	0.04	1	5
Chromium	0.00203	0.00228	0.00406	0.0224	0.5	10	70
Copper	0.0031	<0.00085	0.00621	<0.0085	2	50	100
Mercury Dissolved (CVAf)	-	-	-	-	0.01	0.2	2
Molybdenum	0.0171	0.0113	0.0342	0.122	0.5	10	30
Nickel	0.217	0.0348	0.435	0.624	0.4	10	40
Lead	0.00036	0.000235	0.000721	0.00254	0.5	10	50
Antimony	0.000632	0.000877	0.00127	0.0084	0.06	0.7	5
Selenium	0.00603	0.000809	0.0121	0.016	0.1	0.5	7
Zinc	0.0247	0.00952	0.0495	0.118	4	50	200
Chloride	611	70.3	1220	1520	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	86.2	87.1	173	870	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	-	-	-	-	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information	2:1	8:1
Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	7.710	7.169
Conductivity (µS/cm)	2,180.00	637.00
Temperature (°C)	20.70	20.30
Volume Leachant (Litres)	0.306	1.400
Volume of Eluate VE1 (Litres)	0.200	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
10/01/2013 11:58:57



SDG:	121220-104	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208101
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.219	Moisture Content Ratio (%)	25.3
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	79.8
Particle Size <4mm	>95%		

<div>Case</div> <div>SDG121220-104</div> <div>Lab Sample Number(s)6700153</div> <div>Sampled Date17-Dec-2012</div> <div>Customer Sample Ref.BH107</div> <div>Depth (m)2.50 - 2.90</div> <div>Solid Waste Analysis</div> <div>Total Organic Carbon (%) -</div> <div>Loss on Ignition (%) -</div> <div>Sum of BTEX (mg/kg) -</div> <div>Sum of 7 PCBs (mg/kg) -</div> <div>Mineral Oil (mg/kg) -</div> <div>PAH Sum of 17 (mg/kg) -</div> <div>pH (pH Units) -</div> <div>ANC to pH 6 (mol/kg) -</div> <div>ANC to pH 4 (mol/kg) -</div>		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
Mercury Unfiltered	<0.00002	<0.00002	<0.00004	<0.0002	-	-	-
Total Ammonia as NH3	1.45	<0.2	2.89	2.19	-	-	-
Phenol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Total Ammonium as NH4	1.53	<0.3	3.06	<3	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.1	<0.5	-	-	-
Cresols by HPLC (W)	0.00062	<0.0005	0.00124	<0.005	-	-	-
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	-	-	-
Nitrate as N	<0.0677	0.0833	<0.136	0.707	-	-	-
Xylenols by HPLC (W)	0.00083	0.00083	0.00166	0.0083	-	-	-
Napthol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
2,3,5 Trimethyl-Phenol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Boron	0.454	0.148	0.909	1.95	-	-	-
Total Alkalinity Filtered as CaCO3	160	165	320	1640	-	-	-
Phenols Total of 5 Speciated by HPLC (W)	0.00145	0.00083	0.0029	0.00924	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.0002	<0.001	-	-	-
Acenaphthene by GCMS	0	0.000104	0.000128	0.00098	-	-	-
Acenaphthylene by GCMS	<0.000011	<0.000011	<0.000022	<0.00011	-	-	-
Fluoranthene by GCMS	0	0.0000663	0.0000872	0.000629	-	-	-
Anthracene by GCMS	<0.000015	0.0000212	<0.00003	0.00018	-	-	-
Phenanthrene by GCMS	<0.000022	0.0000691	<0.000044	0.000587	-	-	-
Fluorene by GCMS	<0.000014	0.0000351	<0.000028	0.000298	-	-	-
Chrysene by GCMS	<0.000013	<0.000013	<0.000026	<0.00013	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	7.710	7.169
Conductivity (µS/cm)	2,180.00	637.00
Temperature (°C)	20.70	20.30
Volume Leachant (Litres)	0.306	1.400
Volume of Eluate VE1 (Litres)	0.200	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
10/01/2013 11:58:57



SDG:	121220-104	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208101
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.219	Moisture Content Ratio (%)	25.3
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	79.8
Particle Size <4mm	>95%		

<div>Case</div> <div>SDG121220-104</div> <div>Lab Sample Number(s)6700153</div> <div>Sampled Date17-Dec-2012</div> <div>Customer Sample Ref.BH107</div> <div>Depth (m)2.50 - 2.90</div>		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	C2 Conc ⁿ in 2:1 eluate	C8 Conc ⁿ in 8:1 eluate	A2 2:1 conc ⁿ leached	A2-10 Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
PAH Spec MS - Aqueous (W)							
Pyrene by GCMS	0	0.0000561	0.000103	0.000554	-	-	-
Benz(a)anthracene by GCMS	<0.000017	<0.000017	<0.000034	<0.00017	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000023	<0.000023	<0.000046	<0.00023	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000027	<0.000027	<0.000054	<0.00027	-	-	-
Benzo(a)pyrene by GCMS	<0.000009	<0.000009	<0.000018	<0.00009	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Benzo(ghi)perylene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000014	<0.000014	<0.000028	<0.00014	-	-	-
PAH 16 EPA Total by GCMS	<0.000247	0.000352	<0.000494	0.00299	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	-	-	-	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.006	<0.03	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C10-C12	0.011	<0.01	0.022	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics & Aromatics >C12-C35	0.038	0.043	0.0761	0.422	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	7.710	7.169
Conductivity (µS/cm)	2,180.00	637.00
Temperature (°C)	20.70	20.30
Volume Leachant (Litres)	0.306	1.400
Volume of Eluate VE1 (Litres)	0.200	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
10/01/2013 11:58:57



SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg) 0.219

Mass of dry sample (kg) 0.175

Particle Size <4mm >95%

Site Location

Medina

Moisture Content Ratio (%) 25.3

Dry Matter Content Ratio (%) 79.8

Case

SDG 121220-104

Lab Sample Number(s) 6700153

Sampled Date 17-Dec-2012

Customer Sample Ref. BH107

Depth (m) 2.50 - 2.90

Landfill Waste Acceptance
Criteria LimitsInert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Solid Waste Analysis

Total Organic Carbon (%) -

Loss on Ignition (%) -

Sum of BTEX (mg/kg) -

Sum of 7 PCBs (mg/kg) -

Mineral Oil (mg/kg) -

PAH Sum of 17 (mg/kg) -

pH (pH Units) -

ANC to pH 6 (mol/kg) -

ANC to pH 4 (mol/kg) -

Eluate Analysis

C₂Concⁿ in 2:1
eluateC₈Concⁿ in 8:1
eluateA₂2:1 concⁿ
leachedA₂₋₁₀Cumulative
concⁿ
leachedLimit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

TPH CWG (W)

	mg/l	mg/kg	
Benzene by GC	<0.007	<0.007	<0.014
Toluene by GC	<0.004	<0.004	<0.00801
Ethylbenzene by GC	<0.005	<0.005	<0.01
m & p Xylene by GC	<0.008	<0.008	<0.016
o Xylene by GC	<0.003	<0.003	<0.006
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.022
Sum of BTEX by GC	<0.028	<0.028	<0.056
Aromatics >EC8 -EC10	<0.01	<0.01	<0.02
Aromatics >EC10-EC12	<0.01	<0.01	<0.02
Aromatics >EC12-EC16	0.018	0.018	0.036
Aromatics >EC16-EC21	0.02	0.025	0.04
Aromatics >EC21-EC35	<0.01	<0.01	<0.02
Total Aromatics >EC12-EC35	0.038	0.043	0.0761
Total Aliphatics >C5-C35 Aqueous	<0.01	<0.01	-
Total Aromatics >C6-C35 Aqueous	<0.01	<0.01	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	-
Total Aliphatics C5-C12	0.025	<0.01	0.05
Total Aromatics C6-C12	0.01	<0.01	0.02

Leach Test Information

2:1

8:1

Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	7.710	7.169
Conductivity (µS/cm)	2,180.00	637.00
Temperature (°C)	20.70	20.30
Volume Leachant (Litres)	0.306	1.400
Volume of Eluate VE1 (Litres)	0.200	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

10/01/2013 11:58:57

11:58:36 10/01/2013



CERTIFICATE OF ANALYSIS

SDG:	121220-104	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208101
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.235	Moisture Content Ratio (%)	33.9
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	74.7
Particle Size <4mm	>95%		

Case		Landfill Waste Acceptance Criteria Limits			
SDG	121220-104		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Lab Sample Number(s)	6700154				
Sampled Date	17-Dec-2012				
Customer Sample Ref.	BH107				
Depth (m)	3.80 - 8.00				
Solid Waste Analysis					
Total Organic Carbon (%)	-	-	-	-	-
Loss on Ignition (%)	-	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-	-
pH (pH Units)	-	-	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-	-

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
Arsenic	0.00371	0.000785	0.00743	0.012	0.5	2	25
Barium	0.0643	0.065	0.129	0.649	20	100	300
Cadmium	0.000157	<0.0001	0.000314	<0.001	0.04	1	5
Chromium	0.00209	0.0016	0.00419	0.0167	0.5	10	70
Copper	0.00601	0.00142	0.012	0.0207	2	50	100
Mercury Dissolved (CVAf)	-	-	-	-	0.01	0.2	2
Molybdenum	0.129	0.0364	0.258	0.496	0.5	10	30
Nickel	0.0223	0.00628	0.0446	0.0857	0.4	10	40
Lead	0.000743	0.000154	0.00149	0.00238	0.5	10	50
Antimony	0.0109	0.00446	0.0219	0.0538	0.06	0.7	5
Selenium	0.0029	0.000567	0.00581	0.009	0.1	0.5	7
Zinc	0.0575	0.014	0.115	0.202	4	50	200
Chloride	50	4.2	100	107	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	657	136	1310	2100	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	-	-	-	-	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information	2:1	8:1
Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	7.966	7.862
Conductivity (µS/cm)	1,489.00	444.00
Temperature (°C)	20.60	20.10
Volume Leachant (Litres)	0.291	1.400
Volume of Eluate VE1 (Litres)	0.195	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
10/01/2013 11:58:57



CERTIFICATE OF ANALYSIS

SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg)	0.235
Mass of dry sample (kg)	0.175
Particle Size <4mm	>95%

Site Location

Medina

Moisture Content Ratio (%)	33.9
Dry Matter Content Ratio (%)	74.7

Case

SDG	121220-104
Lab Sample Number(s)	6700154
Sampled Date	17-Dec-2012
Customer Sample Ref.	BH107
Depth (m)	3.80 - 8.00

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Total Organic Carbon (%)	-
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	-
Sum of 7 PCBs (mg/kg)	-
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	-
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

Eluate Analysis

Eluate Analysis	C ₂ Conc ⁿ in 2:1 eluate	C ₈ Conc ⁿ in 8:1 eluate	A ₂ 2:1 conc ⁿ leached	A ₂₋₁₀ Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
Mercury Unfiltered	<0.00002	<0.00002	<0.00004	<0.0002	-	-	-
Total Ammonia as NH3	8.38	0.978	16.8	20.4	-	-	-
Phenol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Total Ammonium as NH4	8.87	1.04	17.8	21.6	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.1	<0.5	-	-	-
Cresols by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	-	-	-
Nitrate as N	0.178	<0.0677	0.356	<0.677	-	-	-
Xylenols by HPLC (W)	0.00252	<0.0005	0.00504	<0.005	-	-	-
Napthol by HPLC (W)	<0.0005	<0.0005	<0.001	<0.005	-	-	-
2,3,5 Trimethyl-Phenol by HPLC (W)	0.00281	<0.0005	0.00563	<0.005	-	-	-
Boron	1.29	0.259	2.58	4.06	-	-	-
Total Alkalinity Filtered as CaCO3	205	105	410	1190	-	-	-
Phenols Total of 5 Speciated by HPLC (W)	0.00533	<0.00064	0.0107	0.00761	-	-	-
PAH Spec MS - Aqueous (W)							
Napthalene by GCMS	<0.0001	<0.0001	<0.0002	<0.001	-	-	-
Acenaphthene by GCMS	0	0.0000381	0.000648	0.000789	-	-	-
Acenaphthylene by GCMS	0	<0.000011	0.0000339	<0.00011	-	-	-
Fluoranthene by GCMS	0	0.0000686	0.000425	0.000892	-	-	-
Anthracene by GCMS	0	<0.000015	0.000042	<0.00015	-	-	-
Phenanthrene by GCMS	<0.000022	<0.000022	<0.000044	<0.00022	-	-	-
Fluorene by GCMS	0	<0.000014	0.000177	<0.00014	-	-	-
Chrysene by GCMS	0	<0.000013	0.0000361	<0.00013	-	-	-

Leach Test Information

	2:1	8:1
Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	7.966	7.862
Conductivity (µS/cm)	1,489.00	444.00
Temperature (°C)	20.60	20.10
Volume Leachant (Litres)	0.291	1.400
Volume of Eluate VE1 (Litres)	0.195	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
10/01/2013 11:58:57

11:58:36 10/01/2013



CERTIFICATE OF ANALYSIS

SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg)	0.235
Mass of dry sample (kg)	0.175
Particle Size <4mm	>95%

Site Location

Medina

Moisture Content Ratio (%)

33.9

Dry Matter Content Ratio (%)

74.7

Case

SDG	121220-104
Lab Sample Number(s)	6700154
Sampled Date	17-Dec-2012
Customer Sample Ref.	BH107
Depth (m)	3.80 - 8.00

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Total Organic Carbon (%)	-
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	-
Sum of 7 PCBs (mg/kg)	-
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	-
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Inert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Eluate Analysis

Eluate Analysis	C2 Conc ⁿ in 2:1 eluate	C8 Conc ⁿ in 8:1 eluate	A2 2:1 conc ⁿ leached	A2-10 Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
PAH Spec MS - Aqueous (W)							
Pyrene by GCMS	0	0.0000611	0.000379	0.000794	-	-	-
Benz(a)anthracene by GCMS	<0.000017	<0.000017	<0.000034	<0.00017	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000023	<0.000023	<0.000046	<0.00023	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000027	<0.000027	<0.0000541	<0.00027	-	-	-
Benzo(a)pyrene by GCMS	<0.000009	<0.000009	<0.000018	<0.00009	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Benzo(ghi)perylene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000014	<0.000014	<0.000028	<0.00014	-	-	-
PAH 16 EPA Total by GCMS	0	<0.000247	0.00174	<0.00247	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	-	-	-	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.00601	<0.03	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics & Aromatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information

2:1

8:1

Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	7.966	7.862
Conductivity (µS/cm)	1,489.00	444.00
Temperature (°C)	20.60	20.10
Volume Leachant (Litres)	0.291	1.400
Volume of Eluate VE1 (Litres)	0.195	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

10/01/2013 11:58:57

11:58:36 10/01/2013



CERTIFICATE OF ANALYSIS

SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg)	0.235
Mass of dry sample (kg)	0.175
Particle Size <4mm	>95%

Site Location

Medina

Moisture Content Ratio (%)

33.9

Dry Matter Content Ratio (%)

74.7

Case

SDG	121220-104
Lab Sample Number(s)	6700154
Sampled Date	17-Dec-2012
Customer Sample Ref.	BH107
Depth (m)	3.80 - 8.00

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Total Organic Carbon (%)	-
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	-
Sum of 7 PCBs (mg/kg)	-
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	-
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Inert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Eluate Analysis

Eluate Analysis	C2	Conc ⁿ in 2:1 eluate	C8	Conc ⁿ in 8:1 eluate	A2	2:1 conc ⁿ leached	A2-10	Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	mg/l				mg/kg				
TPH CWG (W)									
Benzene by GC		<0.007		<0.007		<0.014		<0.07	- - -
Toluene by GC		<0.004		<0.004		<0.00801		<0.04	- - -
Ethylbenzene by GC		<0.005		<0.005		<0.01		<0.05	- - -
m & p Xylene by GC		<0.008		<0.008		<0.016		<0.08	- - -
o Xylene by GC		<0.003		<0.003		<0.00601		<0.03	- - -
Sum m&p and o Xylene by GC		<0.011		<0.011		<0.022		<0.11	- - -
Sum of BTEX by GC		<0.028		<0.028		<0.0561		<0.28	- - -
Aromatics >EC8 -EC10		<0.01		<0.01		<0.02		<0.1	- - -
Aromatics >EC10-EC12		<0.01		<0.01		<0.02		<0.1	- - -
Aromatics >EC12-EC16		<0.01		<0.01		<0.02		<0.1	- - -
Aromatics >EC16-EC21		<0.01		<0.01		<0.02		<0.1	- - -
Aromatics >EC21-EC35		<0.01		<0.01		<0.02		<0.1	- - -
Total Aromatics >EC12-EC35		<0.01		<0.01		<0.02		<0.1	- - -
Total Aliphatics >C5-C35 Aqueous		<0.01		<0.01		-		-	- - -
Total Aromatics >C6-C35 Aqueous		<0.01		<0.01		-		-	- - -
TPH (Total Aliphatics + Total Aromatics) >C5-C35		<0.01		<0.01		-		-	- - -
Total Aliphatics C5-C12		<0.01		<0.01		<0.02		<0.1	- - -
Total Aromatics C6-C12		<0.01		<0.01		<0.02		<0.1	- - -

Leach Test Information

2:1

8:1

Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	7.966	7.862
Conductivity (µS/cm)	1,489.00	444.00
Temperature (°C)	20.60	20.10
Volume Leachant (Litres)	0.291	1.400
Volume of Eluate VE1 (Litres)	0.195	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

10/01/2013 11:58:57

11:58:36 10/01/2013



CERTIFICATE OF ANALYSIS

SDG:	121220-104	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208101
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.256	Moisture Content Ratio (%)	46.2
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	68.4
Particle Size <4mm	>95%		

Case		Landfill Waste Acceptance Criteria Limits		
SDG	121220-104	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Lab Sample Number(s)	6700160			
Sampled Date	17-Dec-2012			
Customer Sample Ref.	BH108			
Depth (m)	1.10 - 6.00			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Concⁿ in 2:1 eluate	Concⁿ in 8:1 eluate	2:1 concⁿ leached	Cumulative concⁿ leached			
	mg/l		mg/kg				
Arsenic	0.00879	0.00187	0.0176	0.0259	0.5	2	25
Barium	0.266	0.19	0.532	1.98	20	100	300
Cadmium	<0.0001	<0.0001	<0.0002	<0.001	0.04	1	5
Chromium	0.00177	0.0019	0.00353	0.0188	0.5	10	70
Copper	0.00275	0.00135	0.0055	0.015	2	50	100
Mercury Dissolved (CVAf)	-	-	-	-	0.01	0.2	2
Molybdenum	0.0197	0.00791	0.0394	0.0914	0.5	10	30
Nickel	0.00532	0.00498	0.0106	0.0502	0.4	10	40
Lead	0.0004	0.000092	0.0008	0.00124	0.5	10	50
Antimony	0.00359	0.00347	0.00718	0.0348	0.06	0.7	5
Selenium	0.00168	0.00075	0.00336	0.00847	0.1	0.5	7
Zinc	0.00409	0.00518	0.00818	0.0506	4	50	200
Chloride	24.9	<2	49.8	26	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	594	298	1190	3290	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	-	-	-	-	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information	2:1	8:1
Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	8.273	7.596
Conductivity (µS/cm)	1,411.00	755.00
Temperature (°C)	20.50	20.10
Volume Leachant (Litres)	0.269	1.400
Volume of Eluate VE1 (Litres)	0.160	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
10/01/2013 11:58:57



CERTIFICATE OF ANALYSIS

SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg) 0.256

Mass of dry sample (kg) 0.175

Particle Size <4mm >95%

Site Location

Medina

Moisture Content Ratio (%) 46.2

Dry Matter Content Ratio (%) 68.4

Case

SDG 121220-104

Lab Sample Number(s) 6700160

Sampled Date 17-Dec-2012

Customer Sample Ref. BH108

Depth (m) 1.10 - 6.00

Landfill Waste Acceptance
Criteria LimitsInert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Solid Waste Analysis

Total Organic Carbon (%) -

Loss on Ignition (%) -

Sum of BTEX (mg/kg) -

Sum of 7 PCBs (mg/kg) -

Mineral Oil (mg/kg) -

PAH Sum of 17 (mg/kg) -

pH (pH Units) -

ANC to pH 6 (mol/kg) -

ANC to pH 4 (mol/kg) -

Eluate Analysis

Eluate Analysis	C ₂	Conc ⁿ in 2:1 eluate	C ₈	Conc ⁿ in 8:1 eluate	A ₂	2:1 conc ⁿ leached	A ₂₋₁₀	Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	mg/l			mg/kg					
Mercury Unfiltered	<0.00002		-		<0.00004		-		- - -
Total Ammonia as NH3	29.5		4.7		58.9		72.8		- - -
Phenol by HPLC (W)	0.00226		<0.0005		0.00452		<0.005		- - -
Total Ammonium as NH4	31.2		4.98		62.5		77.2		- - -
Total Cyanide (W)	<0.05		<0.05		<0.1		<0.5		- - -
Cresols by HPLC (W)	0.00119		<0.0005		0.00238		<0.005		- - -
Beryllium	<0.00007		<0.00007		<0.00014		<0.0007		- - -
Nitrate as N	0.676		<0.0677		1.35		0.705		- - -
Xylenols by HPLC (W)	0.00247		<0.0005		0.00494		<0.005		- - -
Napthol by HPLC (W)	<0.0005		<0.0005		<0.001		<0.005		- - -
2,3,5 Trimethyl-Phenol by HPLC (W)	0.00262		<0.0005		0.00524		<0.005		- - -
Boron	0.978		0.184		1.96		2.67		- - -
Total Alkalinity Filtered as CaCO3	185		140		370		1450		- - -
Phenols Total of 5 Speciated by HPLC (W)	0.0134		<0.00064		0.0268		0.014		- - -
PAH Spec MS - Aqueous (W)									
Napthalene by GCMS	<0.0001		<0.0001		<0.0002		<0.001		- - -
Acenaphthene by GCMS	0		0.00108		0.00174		0.0106		- - -
Acenaphthylene by GCMS	0		0.0000862		0.0000705		0.000802		- - -
Fluoranthene by GCMS	0		0.000722		0.00105		0.00699		- - -
Anthracene by GCMS	0		0.0000608		0.000162		0.000632		- - -
Phenanthrene by GCMS	<0.000022		<0.000022		<0.000044		<0.00022		- - -
Fluorene by GCMS	0		0.000105		0.000755		0.00137		- - -
Chrysene by GCMS	0		0.0000492		0.0000677		0.000474		- - -

Leach Test Information

2:1

8:1

Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	8.273	7.596
Conductivity (µS/cm)	1,411.00	755.00
Temperature (°C)	20.50	20.10
Volume Leachant (Litres)	0.269	1.400
Volume of Eluate VE1 (Litres)	0.160	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

10/01/2013 11:58:57

11:58:36 10/01/2013



CERTIFICATE OF ANALYSIS

SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.256	Moisture Content Ratio (%)	46.2
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	68.4
Particle Size <4mm	>95%		

Case		Landfill Waste Acceptance Criteria Limits		
SDG	121220-104	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Lab Sample Number(s)	6700160			
Sampled Date	17-Dec-2012			
Customer Sample Ref.	BH108			
Depth (m)	1.10 - 6.00			

Solid Waste Analysis

Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg			
	Concn ⁿ in 2:1 eluate	Concn ⁿ in 8:1 eluate	2:1 concn ⁿ leached	Cumulative concn ⁿ leached				
		mg/l		mg/kg				
PAH Spec MS - Aqueous (W)								
Pyrene by GCMS	0	0.000599	0.000839	0.00578	-	-	-	
Benzo(a)anthracene by GCMS	0	0.0000437	0.0000496	0.000415	-	-	-	
Benzo(b)fluoranthene by GCMS	<0.000023	<0.000023	<0.000046	<0.00023	-	-	-	
Benzo(k)fluoranthene by GCMS	<0.000027	<0.000027	<0.000054	<0.00027	-	-	-	
Benzo(a)pyrene by GCMS	<0.000009	<0.000009	<0.000018	<0.00009	-	-	-	
Dibenzo(ah)anthracene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-	
Benzo(ghi)perylene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-	
Indeno(123cd)pyrene by GCMS	<0.000014	<0.000014	<0.000028	<0.00014	-	-	-	
PAH 16 EPA Total by GCMS	0	0.00275	0.00473	0.027	-	-	-	
TPH CWG (W)								
Surrogate Recovery	-	-	-	-	-	-	-	
MTBE GC-FID	<0.003	<0.003	<0.006	<0.03	-	-	-	
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.1	-	-	-	
Aliphatics >C6-C8	<0.01	<0.01	<0.02	<0.1	-	-	-	
Aliphatics >C8-C10	<0.01	<0.01	<0.02	<0.1	-	-	-	
Aliphatics >C10-C12	<0.01	<0.01	<0.02	<0.1	-	-	-	
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.1	-	-	-	
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.1	-	-	-	
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.1	-	-	-	
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-	
Total Aliphatics & Aromatics >C12-C35	0.014	<0.01	0.028	<0.1	-	-	-	
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.1	-	-	-	
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.1	-	-	-	

Leach Test Information	2:1	8:1
Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	8.273	7.596
Conductivity (µS/cm)	1,411.00	755.00
Temperature (°C)	20.50	20.10
Volume Leachant (Litres)	0.269	1.400
Volume of Eluate VE1 (Litres)	0.160	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
10/01/2013 11:58:57

11:58:36 10/01/2013



SDG:	121220-104	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208101
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.256	Moisture Content Ratio (%)	46.2
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	68.4
Particle Size <4mm	>95%		

<div>Case</div> <div>SDG121220-104</div> <div>Lab Sample Number(s)6700160</div> <div>Sampled Date17-Dec-2012</div> <div>Customer Sample Ref.BH108</div> <div>Depth (m)1.10 - 6.00</div> <div>Solid Waste Analysis</div> <div>Total Organic Carbon (%) -</div> <div>Loss on Ignition (%) -</div> <div>Sum of BTEX (mg/kg) -</div> <div>Sum of 7 PCBs (mg/kg) -</div> <div>Mineral Oil (mg/kg) -</div> <div>PAH Sum of 17 (mg/kg) -</div> <div>pH (pH Units) -</div> <div>ANC to pH 6 (mol/kg) -</div> <div>ANC to pH 4 (mol/kg) -</div>		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached			
	mg/l		mg/kg				
TPH CWG (W)							
Benzene by GC	<0.007	<0.007	<0.014	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.008	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.01	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.016	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.006	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.022	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.056	<0.28	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC12-EC16	0.014	<0.01	0.028	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.014	<0.01	0.028	<0.1	-	-	-
Total Aliphatics >C5-C35 Aqueous	<0.01	<0.01	-	-	-	-	-
Total Aromatics >C6-C35 Aqueous	<0.01	<0.01	-	-	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	-	-	-	-	-
Total Aliphatics C5-C12	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aromatics C6-C12	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	8.273	7.596
Conductivity (µS/cm)	1,411.00	755.00
Temperature (°C)	20.50	20.10
Volume Leachant (Litres)	0.269	1.400
Volume of Eluate VE1 (Litres)	0.160	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
10/01/2013 11:58:57



SDG:	121220-104	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208101
Client Reference:		Attention:	Antony Platt	Superseded Report:	

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.222	Moisture Content Ratio (%)	26.9
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	78.8
Particle Size <4mm	>95%		

Case SDG121220-104 Lab Sample Number(s)6700162 Sampled Date17-Dec-2012 Customer Sample Ref.BH109 Depth (m)2.10 - 6.00		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Solid Waste Analysis				
Total Organic Carbon (%)		-	-	-
Loss on Ignition (%)		-	-	-
Sum of BTEX (mg/kg)		-	-	-
Sum of 7 PCBs (mg/kg)		-	-	-
Mineral Oil (mg/kg)		-	-	-
PAH Sum of 17 (mg/kg)		-	-	-
pH (pH Units)		-	-	-
ANC to pH 6 (mol/kg)		-	-	-
ANC to pH 4 (mol/kg)		-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 2:1 eluate	C ₈ Conc ⁿ in 8:1 eluate	A ₂ 2:1 conc ⁿ leached	A ₂₋₁₀ Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
Arsenic	0.00514	0.002	0.0103	0.024	0.5	2	25
Barium	0.093	0.0894	0.186	0.898	20	100	300
Cadmium	<0.0001	<0.0001	<0.0002	<0.001	0.04	1	5
Chromium	0.00232	0.00245	0.00464	0.0243	0.5	10	70
Copper	0.0163	0.00924	0.0326	0.101	2	50	100
Mercury Dissolved (CVAf)	-	-	-	-	0.01	0.2	2
Molybdenum	0.0499	0.019	0.0998	0.23	0.5	10	30
Nickel	0.00444	0.00187	0.00888	0.022	0.4	10	40
Lead	0.000513	0.000352	0.00103	0.00373	0.5	10	50
Antimony	0.0244	0.0137	0.0489	0.151	0.06	0.7	5
Selenium	0.00254	0.000886	0.00508	0.011	0.1	0.5	7
Zinc	0.016	0.00395	0.032	0.055	4	50	200
Chloride	32	2.3	64	61.2	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	183	38.2	367	569	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	-	-	-	-	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information	2:1	8:1
Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	8.197	8.136
Conductivity (µS/cm)	747.00	233.00
Temperature (°C)	20.60	18.60
Volume Leachant (Litres)	0.303	1.400
Volume of Eluate VE1 (Litres)	0.185	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
10/01/2013 11:58:57



CERTIFICATE OF ANALYSIS

SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference

Mass Sample taken (kg) 0.222

Mass of dry sample (kg) 0.175

Particle Size <4mm >95%

Site Location

Medina

Moisture Content Ratio (%) 26.9

Dry Matter Content Ratio (%) 78.8

Case

SDG 121220-104

Lab Sample Number(s) 6700162

Sampled Date 17-Dec-2012

Customer Sample Ref. BH109

Depth (m) 2.10 - 6.00

Landfill Waste Acceptance
Criteria LimitsInert Waste
LandfillStable
Non-reactive
Hazardous
Waste in Non-
Hazardous
LandfillHazardous
Waste Landfill

Solid Waste Analysis

Total Organic Carbon (%) -

Loss on Ignition (%) -

Sum of BTEX (mg/kg) -

Sum of 7 PCBs (mg/kg) -

Mineral Oil (mg/kg) -

PAH Sum of 17 (mg/kg) -

pH (pH Units) -

ANC to pH 6 (mol/kg) -

ANC to pH 4 (mol/kg) -

Eluate Analysis

Eluate Analysis	C ₂	Conc ⁿ in 2:1 eluate	C ₈	Conc ⁿ in 8:1 eluate	A ₂	2:1 conc ⁿ leached	A ₂₋₁₀	Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l			mg/kg							
Mercury Unfiltered		<0.00002		<0.00002		<0.00004		<0.0002	-	-	-
Total Ammonia as NH3		9.82		2.52		19.7		34.6	-	-	-
Phenol by HPLC (W)		<0.0005		<0.0005		<0.001		<0.005	-	-	-
Total Ammonium as NH4		10.4		2.67		20.8		36.6	-	-	-
Total Cyanide (W)		<0.05		<0.05		<0.1		<0.5	-	-	-
Cresols by HPLC (W)		<0.0005		<0.0005		<0.001		<0.005	-	-	-
Beryllium		<0.00007		<0.00007		<0.00014		<0.0007	-	-	-
Nitrate as N		0.724		0.344		1.45		3.93	-	-	-
Xylenols by HPLC (W)		0.00332		<0.0005		0.00664		<0.005	-	-	-
Napthol by HPLC (W)		<0.0005		<0.0005		<0.001		<0.005	-	-	-
2,3,5 Trimethyl-Phenol by HPLC (W)		0.00237		<0.0005		0.00474		<0.005	-	-	-
Boron		1.07		0.226		2.14		3.35	-	-	-
Total Alkalinity Filtered as CaCO3		185		90		370		1020	-	-	-
Phenols Total of 5 Speciated by HPLC (W)		0.00569		<0.00064		0.0114		0.00732	-	-	-
PAH Spec MS - Aqueous (W)											
Naphthalene by GCMS		<0.0001		<0.0001		<0.0002		<0.001	-	-	-
Acenaphthene by GCMS		0		<0.000015		0.000213		<0.00015	-	-	-
Acenaphthylene by GCMS		<0.000011		<0.000011		<0.000022		<0.00011	-	-	-
Fluoranthene by GCMS		0		0.0000497		0.000195		0.000559	-	-	-
Anthracene by GCMS		<0.000015		<0.000015		<0.00003		<0.00015	-	-	-
Phenanthrene by GCMS		<0.000022		<0.000022		<0.000044		<0.00022	-	-	-
Fluorene by GCMS		0		<0.000014		0.0000285		<0.00014	-	-	-
Chrysene by GCMS		0		0.0000199		0.000032		0.000194	-	-	-

Leach Test Information

	2:1	8:1
Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	8.197	8.136
Conductivity (µS/cm)	747.00	233.00
Temperature (°C)	20.60	18.60
Volume Leachant (Litres)	0.303	1.400
Volume of Eluate VE1 (Litres)	0.185	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

10/01/2013 11:58:57

11:58:36 10/01/2013



CERTIFICATE OF ANALYSIS

SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.222	Moisture Content Ratio (%)	26.9
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	78.8
Particle Size <4mm	>95%		

Case		Landfill Waste Acceptance Criteria Limits		
SDG	121220-104	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Lab Sample Number(s)	6700162			
Sampled Date	17-Dec-2012			
Customer Sample Ref.	BH109			
Depth (m)	2.10 - 6.00			

Solid Waste Analysis

Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	C2	C8	A2	A2-10	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg			
	Conc ⁿ in 2:1 eluate	Conc ⁿ in 8:1 eluate	2:1 conc ⁿ leached	Cumulative conc ⁿ leached				
		mg/l		mg/kg				
PAH Spec MS - Aqueous (W)								
Pyrene by GCMS	0	0.0000755	0.000234	0.000808	-	-	-	
Benz(a)anthracene by GCMS	<0.000017	<0.000017	<0.000034	<0.00017	-	-	-	
Benzo(b)fluoranthene by GCMS	<0.000023	<0.000023	<0.000046	<0.00023	-	-	-	
Benzo(k)fluoranthene by GCMS	<0.000027	<0.000027	<0.000054	<0.00027	-	-	-	
Benzo(a)pyrene by GCMS	<0.000009	0.0000141	<0.000018	0.000123	-	-	-	
Dibenzo(ah)anthracene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-	
Benzo(ghi)perylene by GCMS	<0.000016	<0.000016	<0.000032	<0.00016	-	-	-	
Indeno(123cd)pyrene by GCMS	<0.000014	<0.000014	<0.000028	<0.00014	-	-	-	
PAH 16 EPA Total by GCMS	0	<0.000247	0.000702	<0.00247	-	-	-	
TPH CWG (W)								
Surrogate Recovery	-	-	-	-	-	-	-	
MTBE GC-FID	<0.003	<0.003	<0.006	<0.03	-	-	-	
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.1	-	-	-	
Aliphatics >C6-C8	<0.01	<0.01	<0.02	<0.1	-	-	-	
Aliphatics >C8-C10	<0.01	<0.01	<0.02	<0.1	-	-	-	
Aliphatics >C10-C12	<0.01	<0.01	<0.02	<0.1	-	-	-	
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.1	-	-	-	
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.1	-	-	-	
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.1	-	-	-	
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-	
Total Aliphatics & Aromatics >C12-C35	<0.01	<0.01	<0.02	<0.1	-	-	-	
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.1	-	-	-	
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.1	-	-	-	

Leach Test Information	2:1	8:1
Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	8.197	8.136
Conductivity (µS/cm)	747.00	233.00
Temperature (°C)	20.60	18.60
Volume Leachant (Litres)	0.303	1.400
Volume of Eluate VE1 (Litres)	0.185	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
10/01/2013 11:58:57

11:58:36 10/01/2013



CERTIFICATE OF ANALYSIS

SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference		Site Location	Medina
Mass Sample taken (kg)	0.222	Moisture Content Ratio (%)	26.9
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	78.8
Particle Size <4mm	>95%		

Case		Landfill Waste Acceptance Criteria Limits		
SDG	121220-104	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Lab Sample Number(s)	6700162			
Sampled Date	17-Dec-2012			
Customer Sample Ref.	BH109			
Depth (m)	2.10 - 6.00			

Solid Waste Analysis

Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	C2 Conc ⁿ in 2:1 eluate	C8 Conc ⁿ in 8:1 eluate	A2 2:1 conc ⁿ leached	A2-10 Cumulative conc ⁿ leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l		mg/kg				
TPH CWG (W)							
Benzene by GC	<0.007	<0.007	<0.014	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.008	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.01	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.016	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.006	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.022	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.056	<0.28	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.02	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aliphatics >C5-C35 Aqueous	<0.01	<0.01	-	-	-	-	-
Total Aromatics >C6-C35 Aqueous	<0.01	<0.01	-	-	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	-	-	-	-	-
Total Aliphatics C5-C12	<0.01	<0.01	<0.02	<0.1	-	-	-
Total Aromatics C6-C12	<0.01	<0.01	<0.02	<0.1	-	-	-

Leach Test Information	2:1	8:1
Date Prepared	21-Dec-2012	03-Jan-2013
pH (pH Units)	8.197	8.136
Conductivity (µS/cm)	747.00	233.00
Temperature (°C)	20.60	18.60
Volume Leachant (Litres)	0.303	1.400
Volume of Eluate VE1 (Litres)	0.185	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
10/01/2013 11:58:57



CERTIFICATE OF ANALYSIS

Validated

SDG:	121220-104	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208101
Client Reference:		Attention:	Antony Platt	Superseded Report:	

Notification of NDPs (No determination possible)

Date Received : 20/12/2012 14:25:25

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
6700156	BH108	0.50	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos



SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
PM114		Leaching Procedure for CEN Two Stage BatchTest 2:1/8:1 Cumulative		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM243		Mixed Anions In Soils By Kone		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		
TM321		Organic matter Content of Soil By Titration		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



SDG:	121220-104	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208101
Client Reference:		Attention:	Antony Platt	Superseded Report:	

Test Completion Dates

Lab Sample No(s)	6700145	6700147	6700149	6700151	6700153	6700154	6700156	6700158	6700160	6700161
Customer Sample Ref.	BH106	BH106	BH106	BH107	BH107	BH107	BH108	BH108	BH108	BH109
AGS Ref.										
Depth	0.50	1.00 - 6.00	6.00 - 7.00	0.50	2.50 - 2.90	3.80 - 8.00	0.50	3.60	1.10 - 6.00	0.50
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Alkalinity Filtered as CaCO3		06-Jan-2013	08-Jan-2013		08-Jan-2013	08-Jan-2013			08-Jan-2013	
Ammoniacal Nitrogen		09-Jan-2013	09-Jan-2013		09-Jan-2013	09-Jan-2013			09-Jan-2013	
Ammonium Soil by Titration	04-Jan-2013			02-Jan-2013			02-Jan-2013			04-Jan-2013
Anions by Kone (soil)	09-Jan-2013			08-Jan-2013			09-Jan-2013			09-Jan-2013
Anions by Kone (w)		09-Jan-2013	09-Jan-2013		09-Jan-2013	09-Jan-2013			09-Jan-2013	
Asbestos Identification (Soil)	08-Jan-2013			08-Jan-2013			08-Jan-2013	10-Jan-2013		08-Jan-2013
Boron Water Soluble	04-Jan-2013			04-Jan-2013			04-Jan-2013			04-Jan-2013
CEN 2:1 Leachate (2 Stage)		27-Dec-2012	02-Jan-2013		02-Jan-2013	03-Jan-2013			02-Jan-2013	
CEN 2:1 Readings		03-Jan-2013	04-Jan-2013		04-Jan-2013	04-Jan-2013			04-Jan-2013	
CEN 8:1 Leachate (2 Stage)		03-Jan-2013	04-Jan-2013		04-Jan-2013	04-Jan-2013			04-Jan-2013	
CEN 8:1 Readings		04-Jan-2013	07-Jan-2013		07-Jan-2013	07-Jan-2013			07-Jan-2013	
Cyanide Comp/Free/Total/Thiocyanate	03-Jan-2013	08-Jan-2013	09-Jan-2013	03-Jan-2013	09-Jan-2013	09-Jan-2013	03-Jan-2013		09-Jan-2013	03-Jan-2013
Dissolved Metals by ICP-MS		08-Jan-2013	09-Jan-2013		09-Jan-2013	09-Jan-2013			09-Jan-2013	
EPH CWG (Aliphatic) Aqueous GC (W)		09-Jan-2013	10-Jan-2013		10-Jan-2013	10-Jan-2013			10-Jan-2013	
EPH CWG (Aliphatic) GC (S)	07-Jan-2013			07-Jan-2013			07-Jan-2013			07-Jan-2013
EPH CWG (Aromatic) Aqueous GC (W)		09-Jan-2013	10-Jan-2013		10-Jan-2013	10-Jan-2013			10-Jan-2013	
EPH CWG (Aromatic) GC (S)	07-Jan-2013			07-Jan-2013			07-Jan-2013			07-Jan-2013
GRO by GC-FID (S)	06-Jan-2013			04-Jan-2013			04-Jan-2013			06-Jan-2013
GRO by GC-FID (W)		05-Jan-2013	07-Jan-2013		07-Jan-2013	07-Jan-2013			07-Jan-2013	
Low Level Phenols by HPLC (W)		08-Jan-2013	09-Jan-2013		09-Jan-2013	09-Jan-2013			09-Jan-2013	
Mercury Unfiltered		09-Jan-2013	09-Jan-2013		09-Jan-2013	09-Jan-2013			09-Jan-2013	
Metals by iCap-OES (Soil)	08-Jan-2013			04-Jan-2013			08-Jan-2013			08-Jan-2013
Nitrite by Kone (w)		07-Jan-2013	09-Jan-2013		09-Jan-2013	09-Jan-2013			09-Jan-2013	
PAH by GCMS	05-Jan-2013			09-Jan-2013			09-Jan-2013			09-Jan-2013
PAH Spec MS - Aqueous (W)		09-Jan-2013	09-Jan-2013		09-Jan-2013	09-Jan-2013			09-Jan-2013	
pH	04-Jan-2013			04-Jan-2013			04-Jan-2013			04-Jan-2013
pH Value		07-Jan-2013	08-Jan-2013		08-Jan-2013	08-Jan-2013			08-Jan-2013	
Phenols by HPLC (S)	09-Jan-2013			09-Jan-2013			09-Jan-2013			09-Jan-2013
Sample description	02-Jan-2013	27-Dec-2012	27-Dec-2012	29-Dec-2012	28-Dec-2012	28-Dec-2012	29-Dec-2012		28-Dec-2012	29-Dec-2012
Total Organic Carbon	08-Jan-2013			08-Jan-2013						08-Jan-2013
Total Organic Carbon (Asb)							08-Jan-2013			
TPH CWG (W)		02-Jan-2013	03-Jan-2013		03-Jan-2013	03-Jan-2013			03-Jan-2013	
TPH CWG GC (S)	07-Jan-2013			07-Jan-2013			07-Jan-2013			07-Jan-2013

Lab Sample No(s)	6700162
Customer Sample Ref.	BH109
AGS Ref.	
Depth	2.10 - 6.00
Type	SOLID
Alkalinity Filtered as CaCO3	08-Jan-2013
Ammoniacal Nitrogen	09-Jan-2013
Anions by Kone (w)	09-Jan-2013
CEN 2:1 Leachate (2 Stage)	02-Jan-2013
CEN 2:1 Readings	04-Jan-2013
CEN 8:1 Leachate (2 Stage)	04-Jan-2013
CEN 8:1 Readings	07-Jan-2013
Cyanide Comp/Free/Total/Thiocyanate	09-Jan-2013
Dissolved Metals by ICP-MS	09-Jan-2013
EPH CWG (Aliphatic) Aqueous GC (W)	10-Jan-2013
EPH CWG (Aromatic) Aqueous GC (W)	10-Jan-2013
GRO by GC-FID (W)	07-Jan-2013
Low Level Phenols by HPLC (W)	09-Jan-2013
Mercury Unfiltered	09-Jan-2013
Nitrite by Kone (w)	09-Jan-2013
PAH Spec MS - Aqueous (W)	09-Jan-2013
pH Value	08-Jan-2013
Sample description	28-Dec-2012
TPH CWG (W)	03-Jan-2013



SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

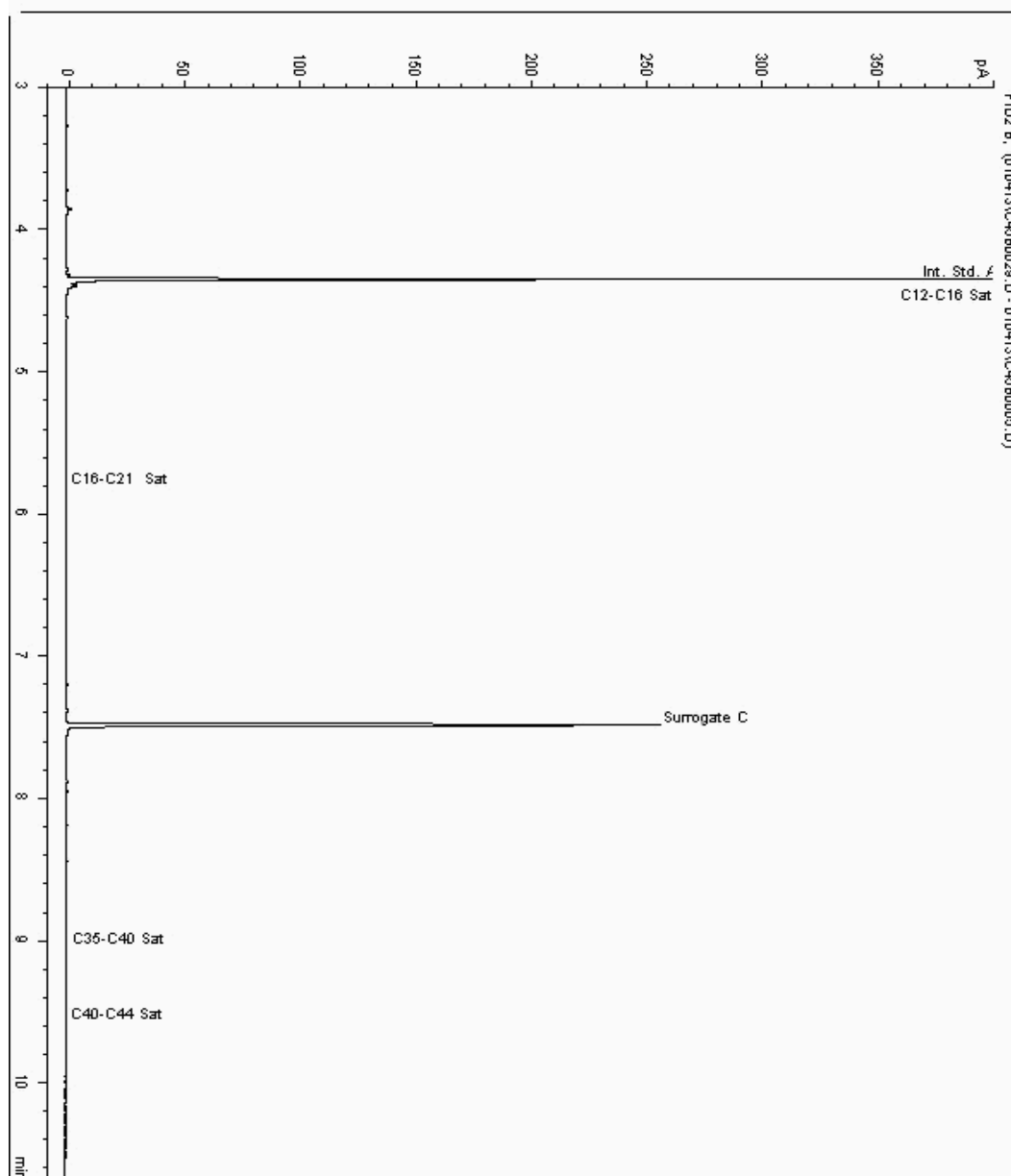
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 6730355
Sample ID : BH107

Depth : 0.50

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6469914-6730355
Date Acquired : 07/01/13 12:40:00 PM
Units : ppb
Dilution:





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

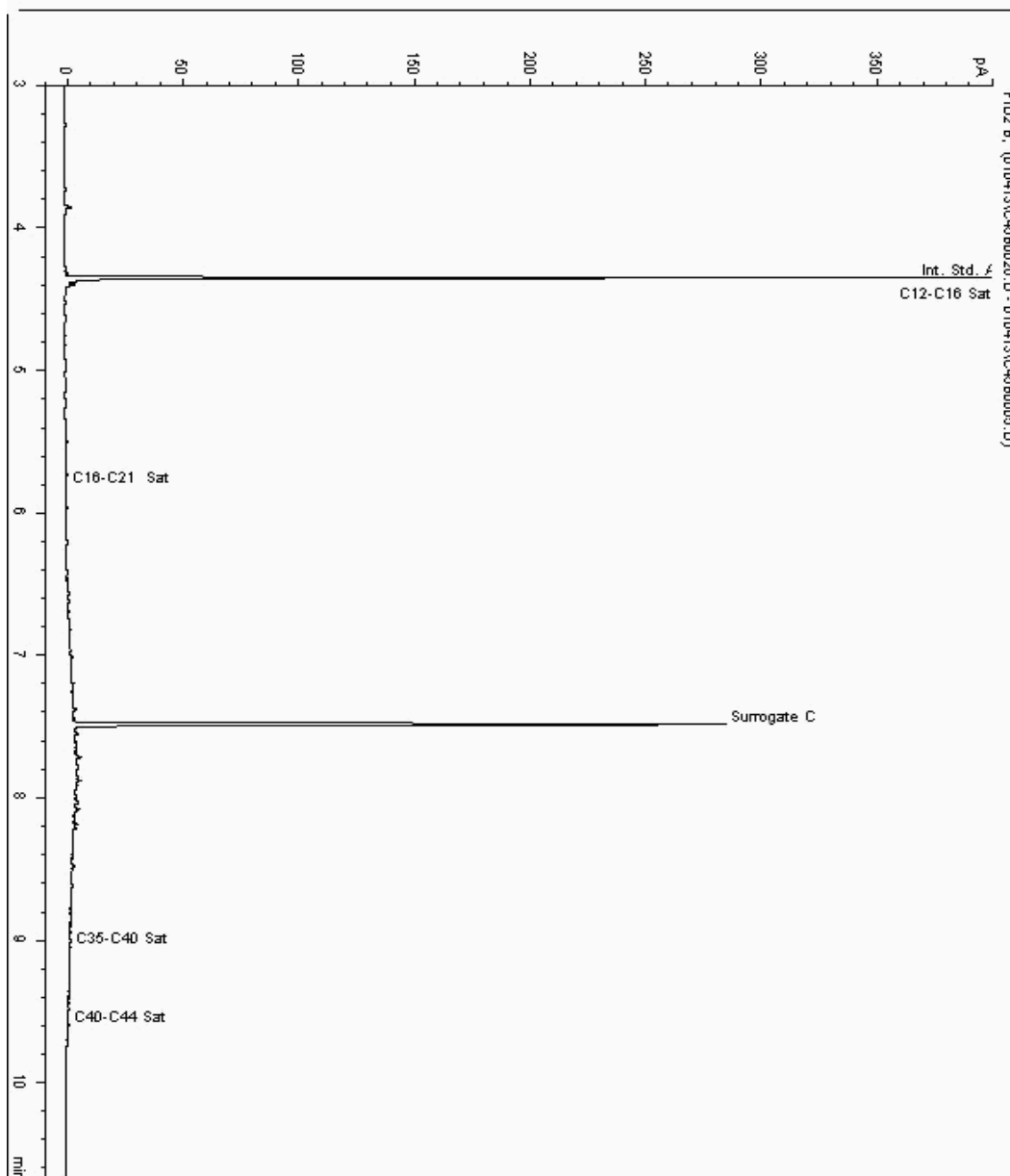
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 6730746
Sample ID : BH108

Depth : 0.50

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6469949-6730746
Date Acquired : 07/01/13 11:49:42 PM
Units : ppb
Dilution:





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

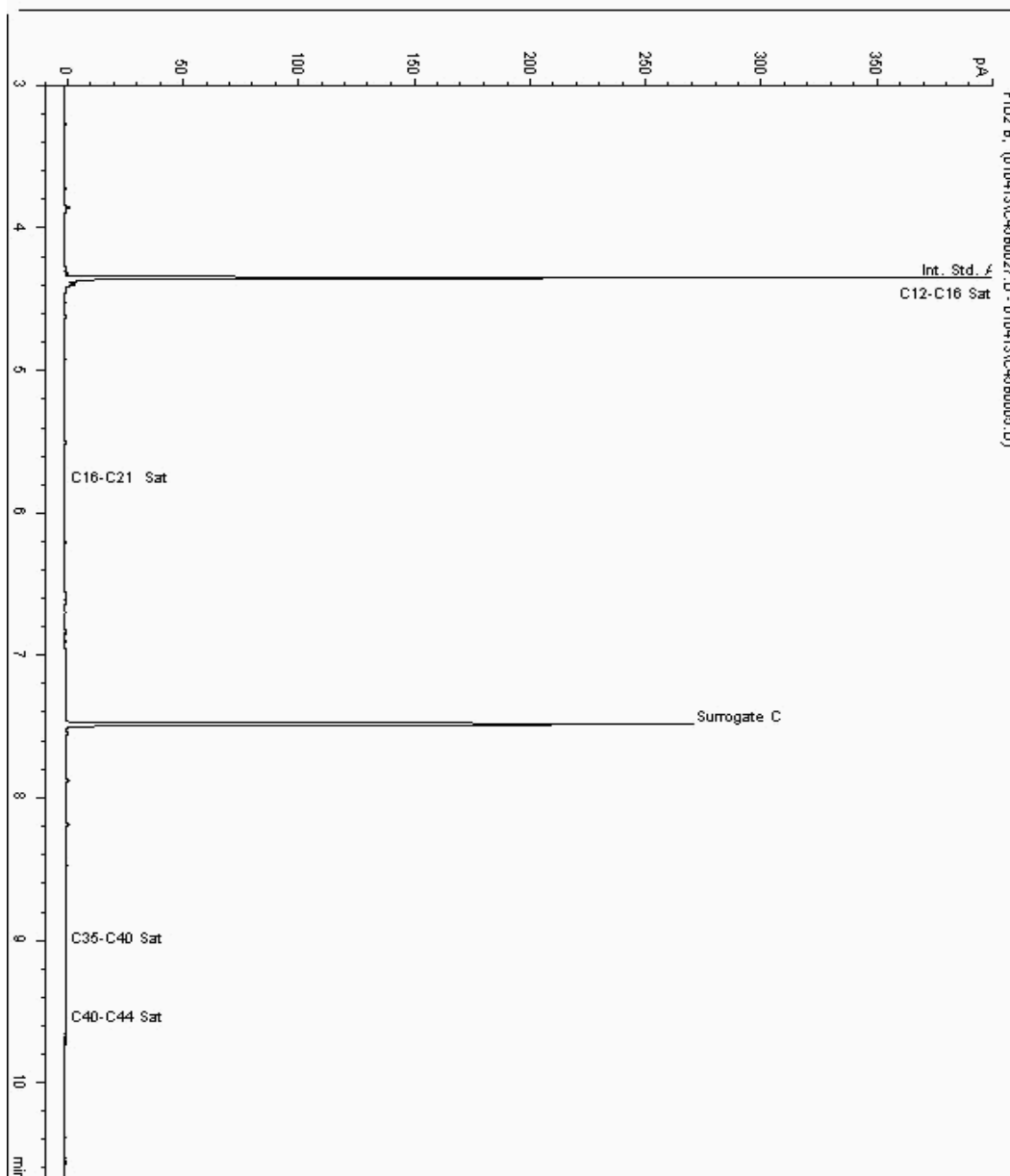
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 6730770
Sample ID : BH109

Depth : 0.50

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6469984-6730770
Date Acquired : 07/01/13 12:09:36 PM
Units : ppb
Dilution:





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

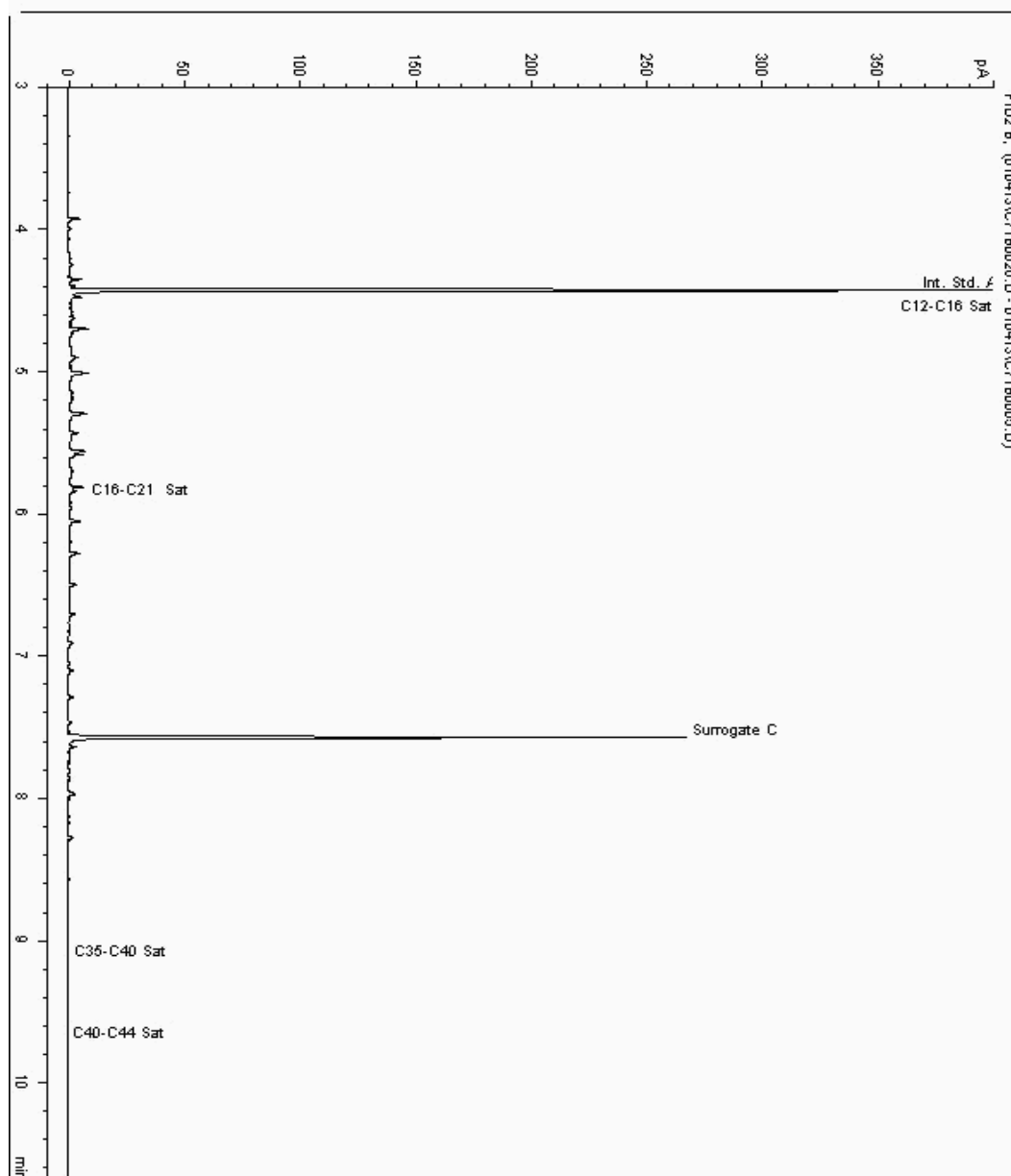
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 6731268
Sample ID : BH106

Depth : 0.50

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6469840-6731268
Date Acquired : 04/01/2013 15:54:30 PM
Units : ppb
Dilution:





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

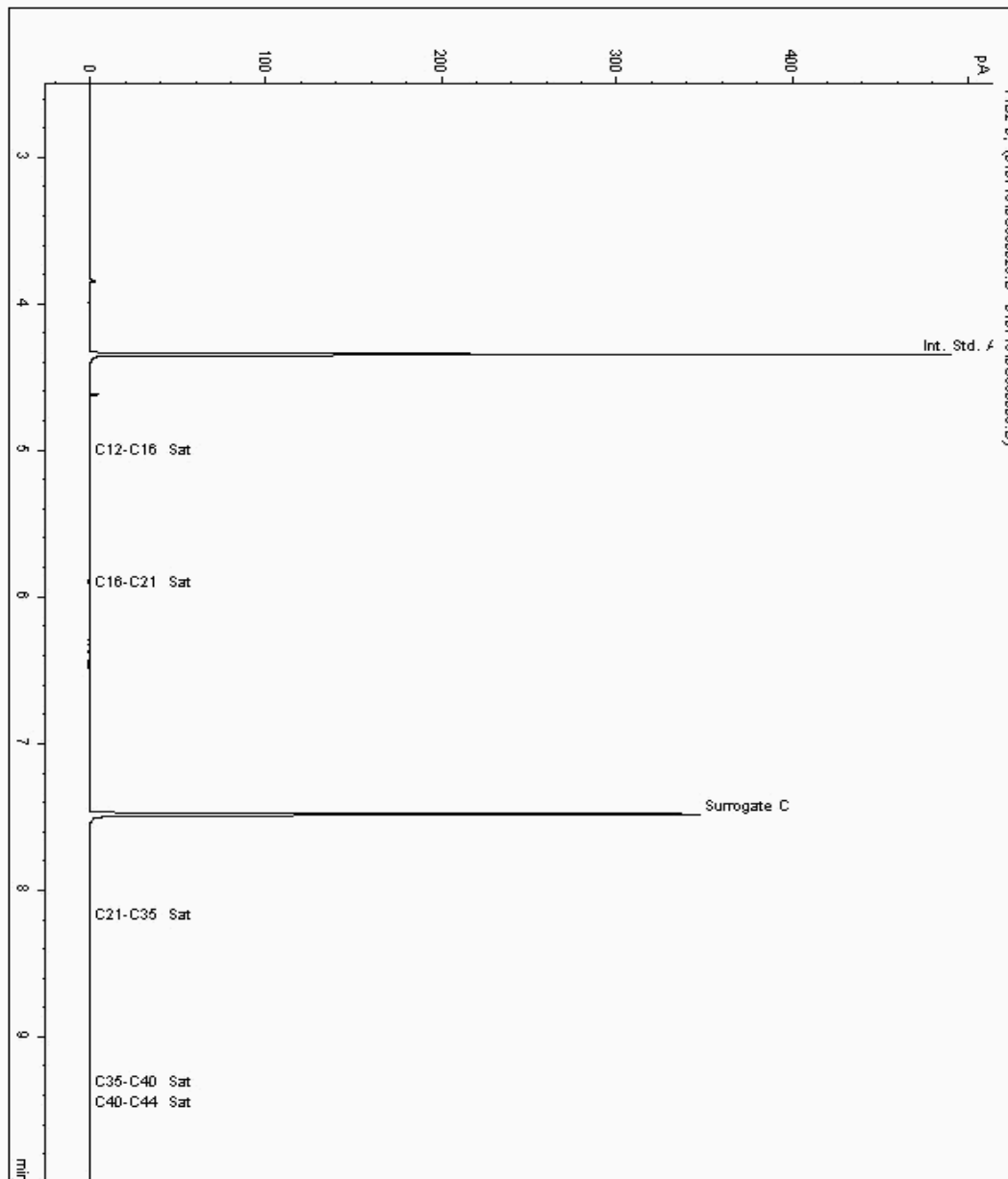
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6732029
Sample ID : BH106

Depth : 1.00 - 6.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6470022-6732029
Date Acquired : 08/01/13 02:04:29 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

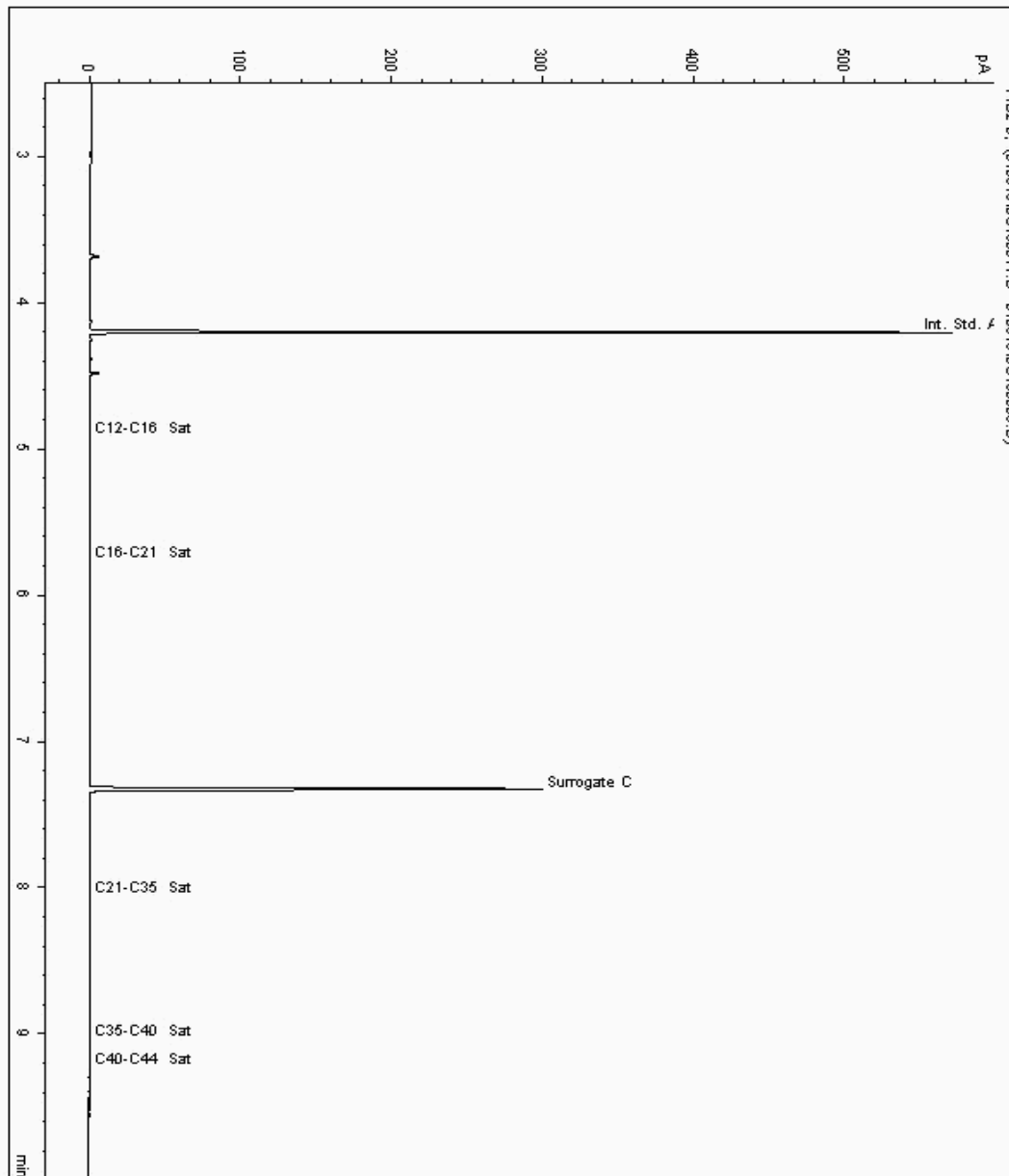
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6739111
Sample ID : BH107

Depth : 2.50 - 2.90

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6470068-6739111
Date Acquired : 08/01/2013 20:15:09 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

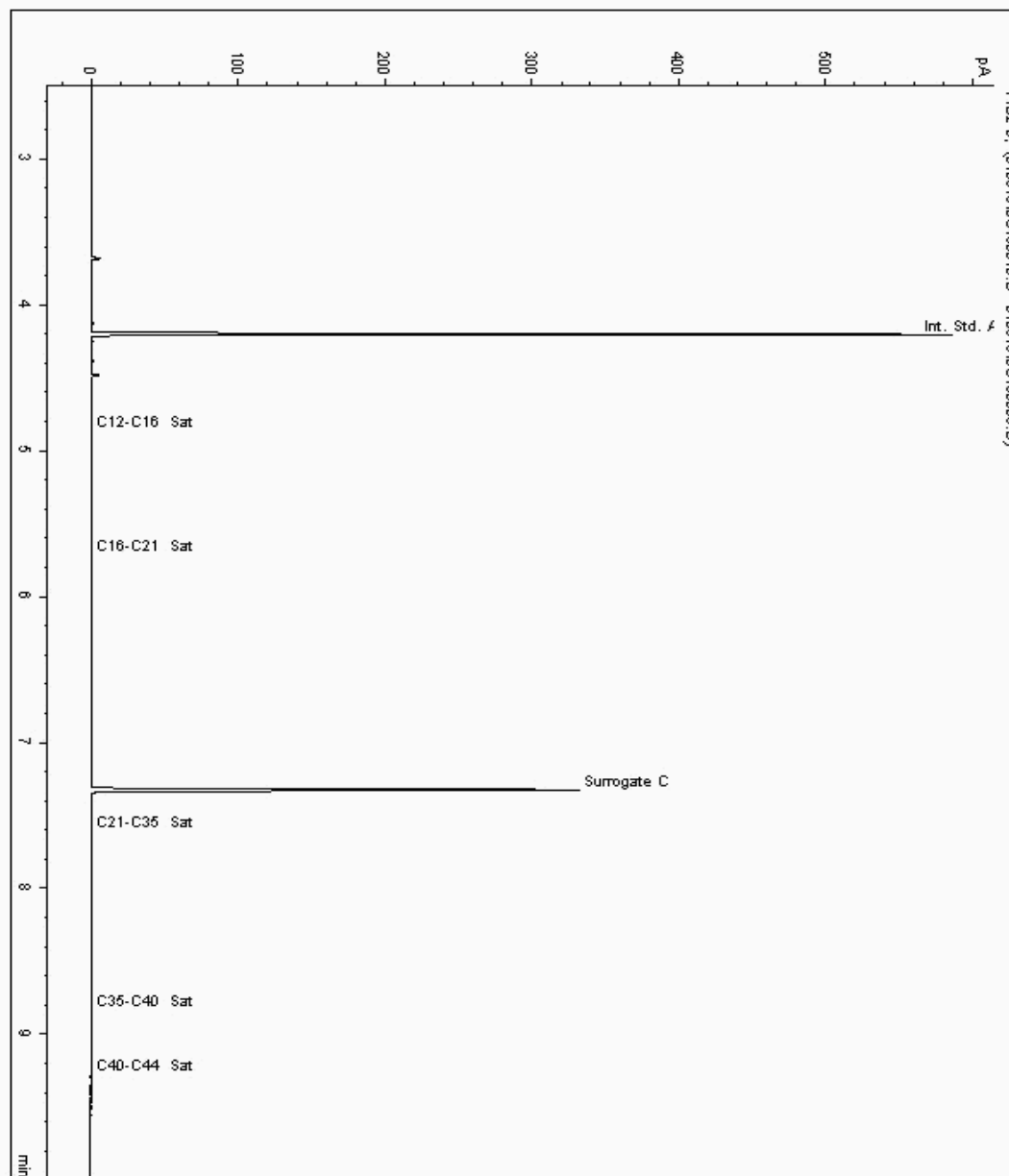
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6739119
Sample ID : BH109

Depth : 2.10 - 6.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6470123-6739119
Date Acquired : 08/01/2013 19:56:10 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

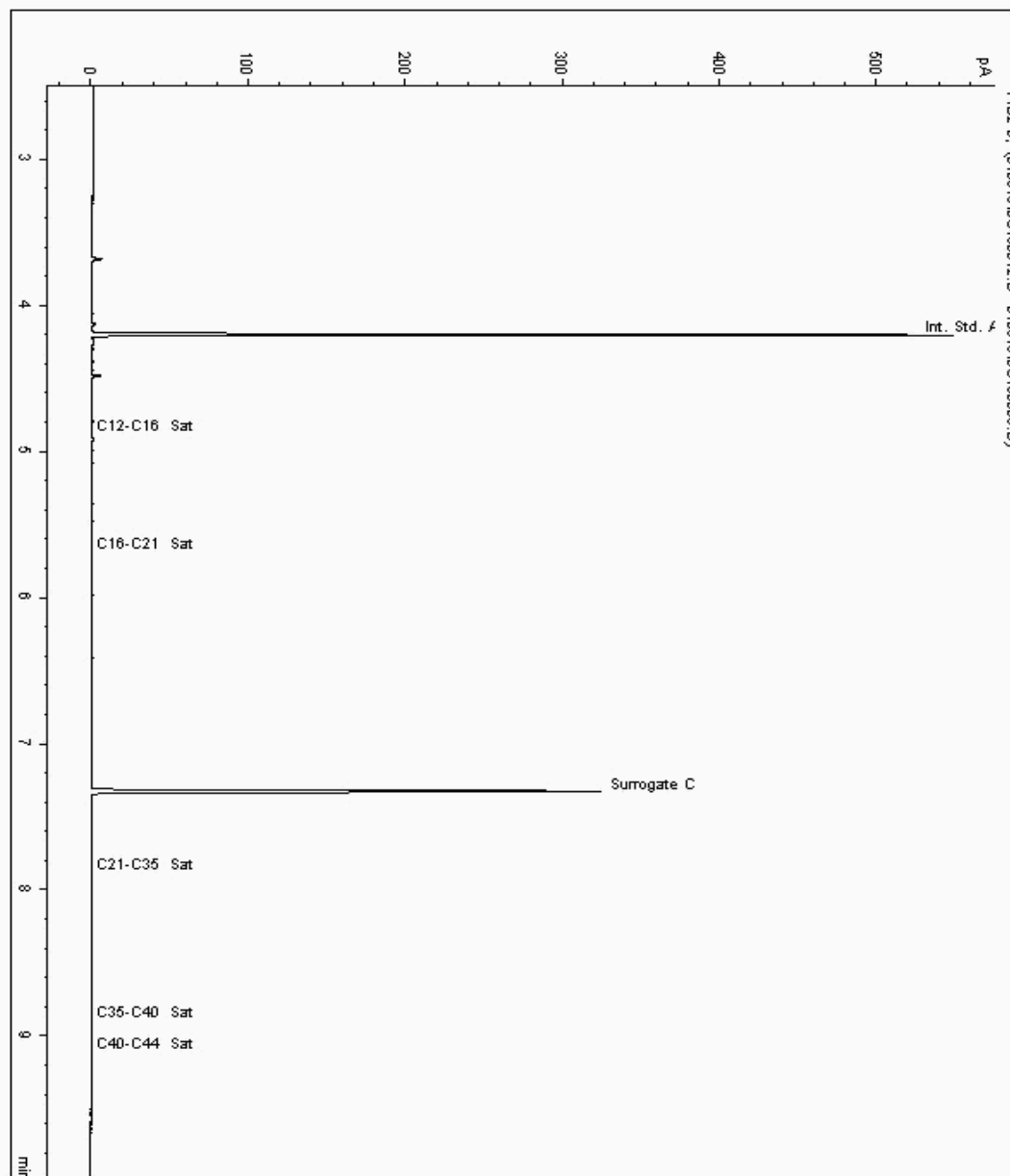
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6739121
Sample ID : BH107

Depth : 3.80 - 8.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6470087-6739121
Date Acquired : 08/01/2013 20:34:26 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

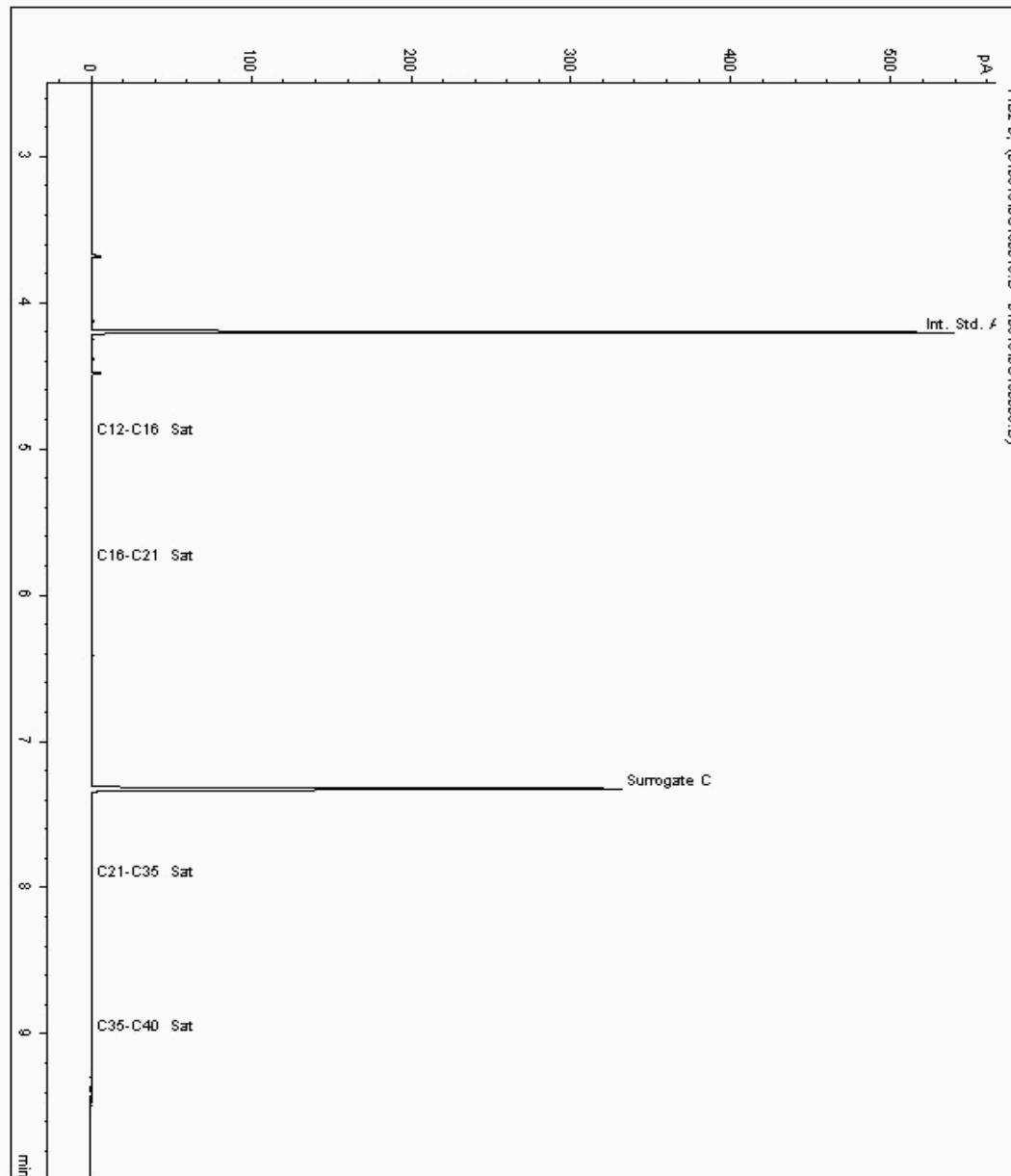
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6739126
Sample ID : BH106

Depth : 6.00 - 7.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6470049-6739126
Date Acquired : 08/01/2013 20:53:27 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.011





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

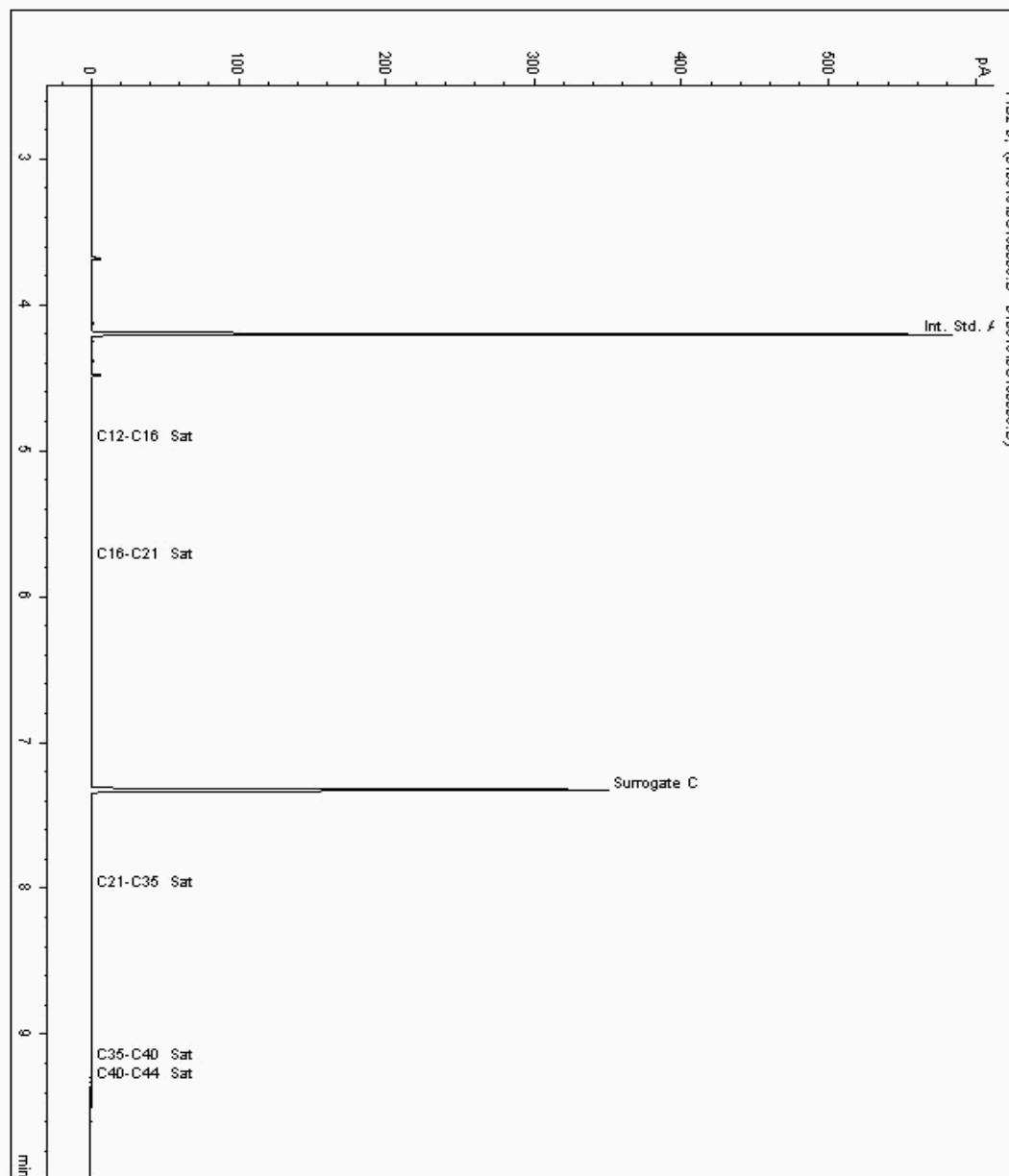
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6739129
Sample ID : BH108

Depth : 1.10 - 6.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6470108-6739129
Date Acquired : 08/01/2013 19:37:10 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

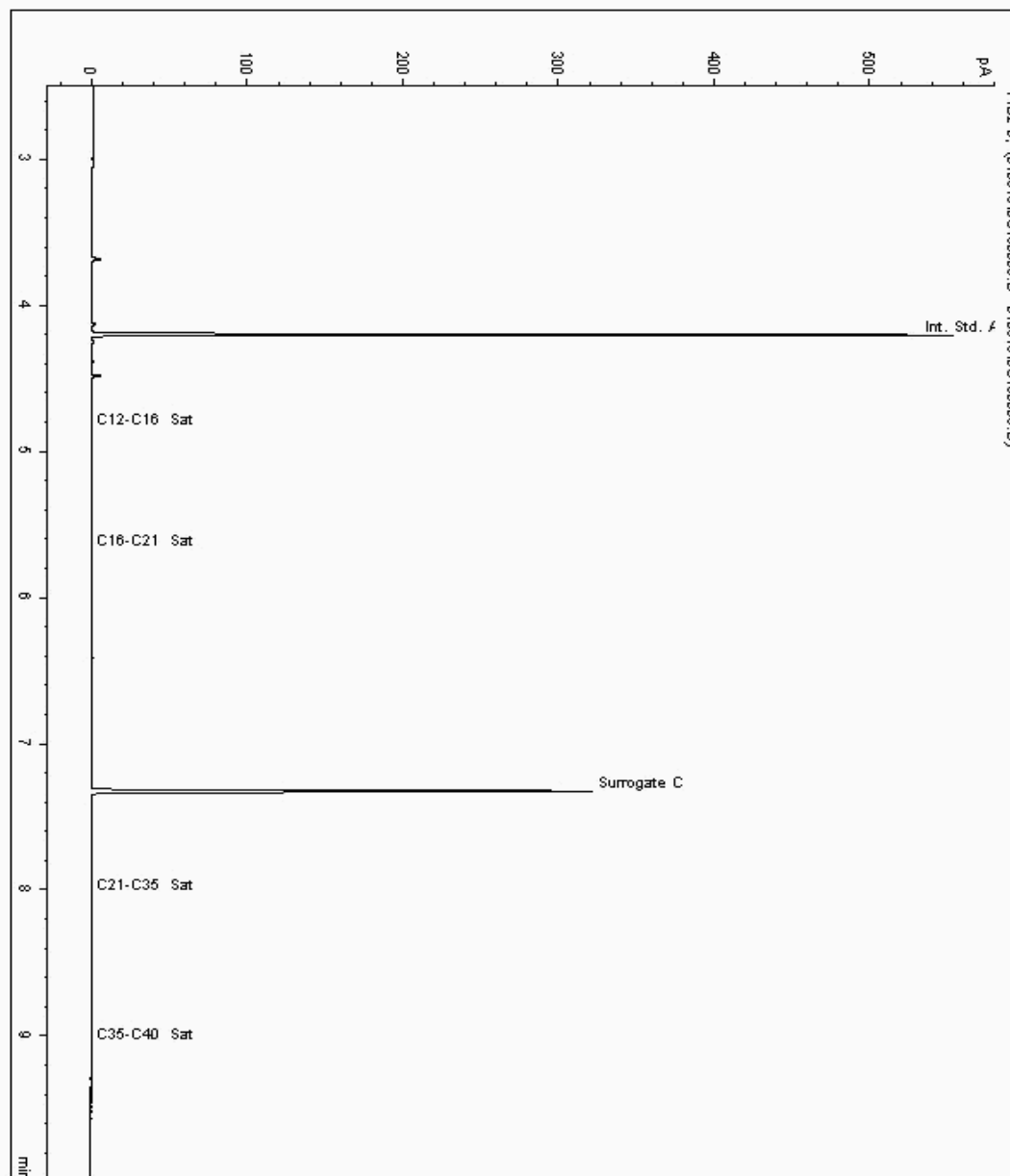
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6739165
Sample ID : BH106

Depth : 1.00 - 6.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6488426-6739165
Date Acquired : 08/01/2013 19:18:11 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

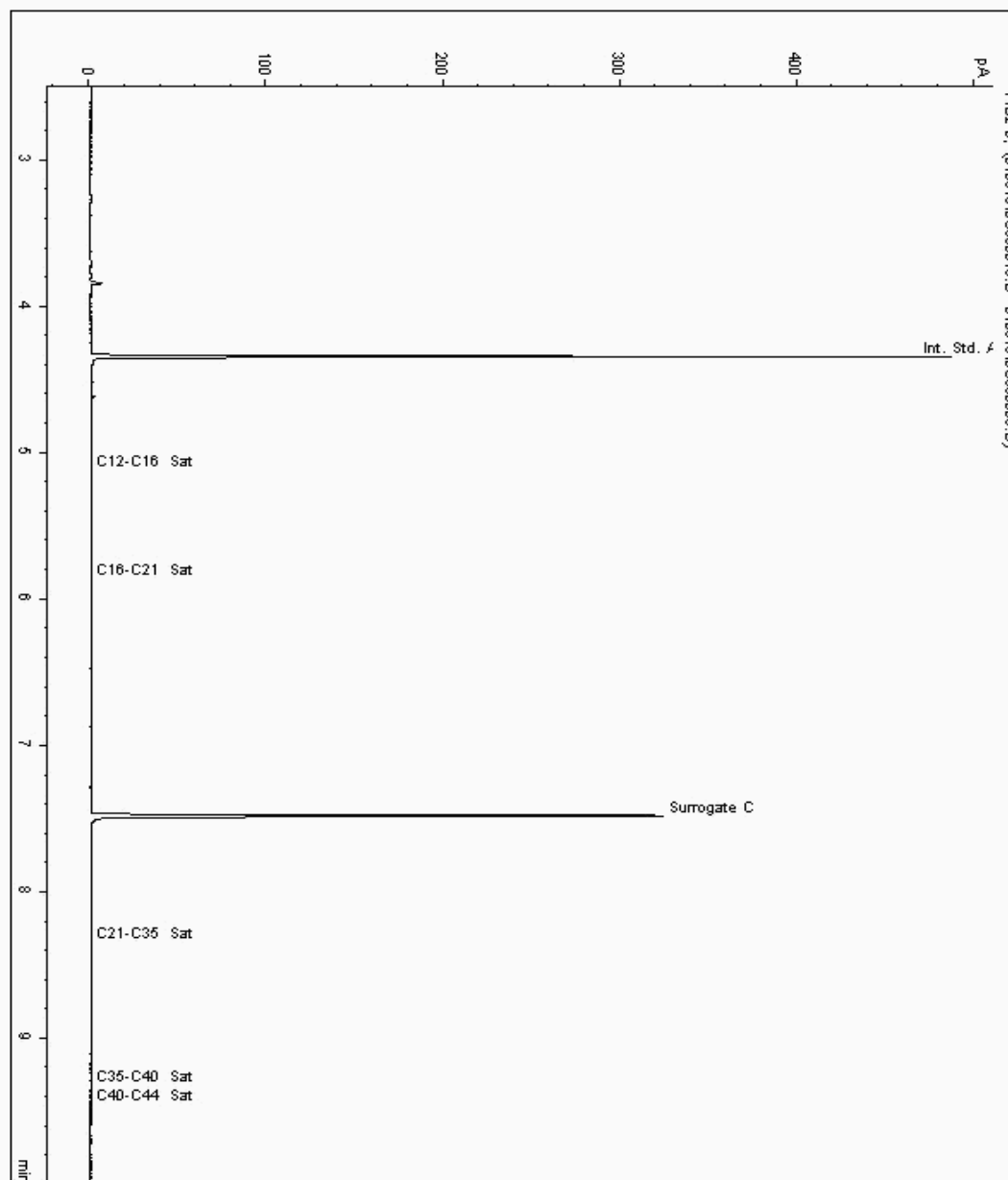
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6741688
Sample ID : BH108

Depth : 1.10 - 6.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6491307-6741688
Date Acquired : 09/01/13 20:23:01 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

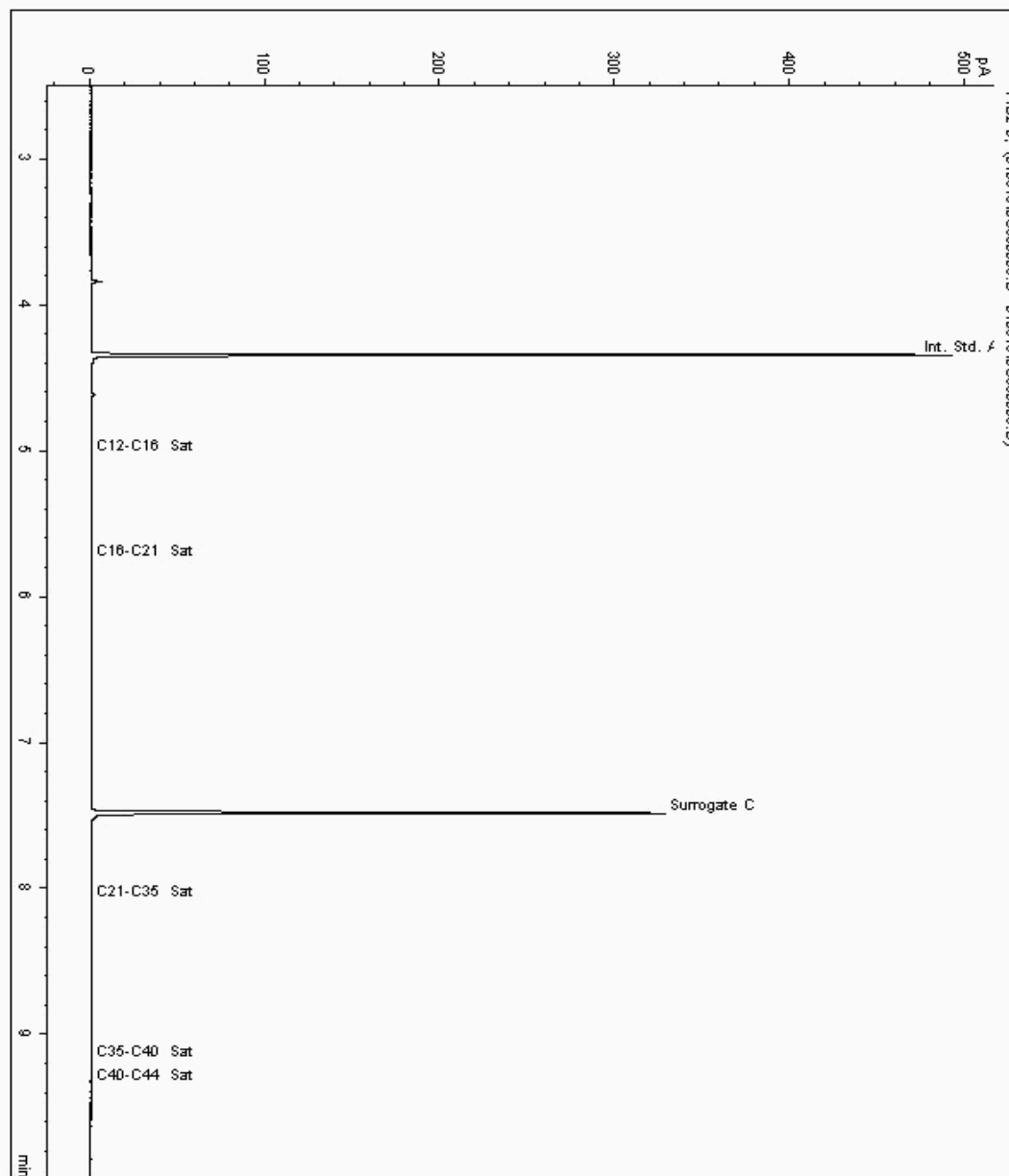
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6741693
Sample ID : BH107

Depth : 3.80 - 8.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6491255-6741693
Date Acquired : 09/01/13 19:08:14 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

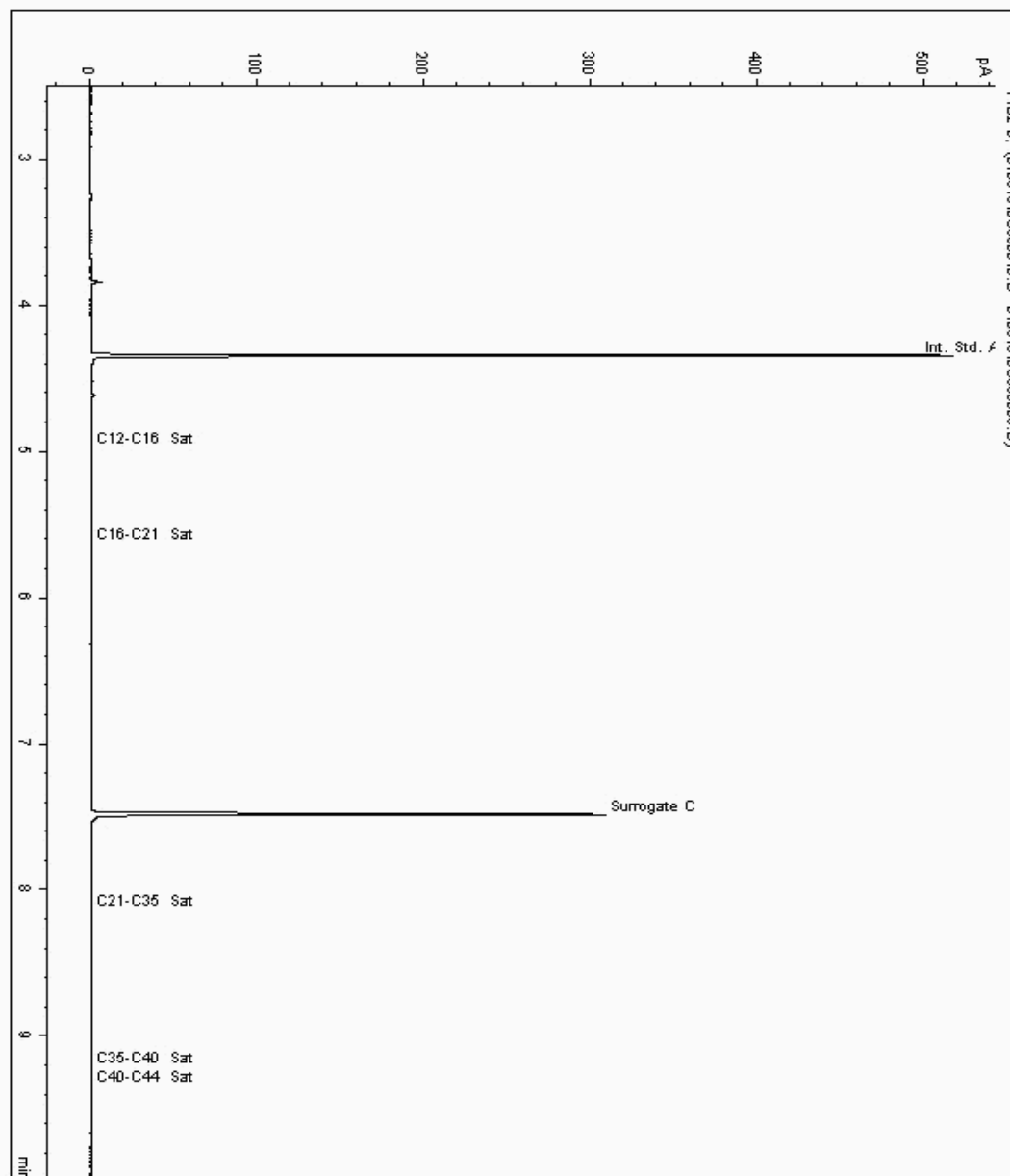
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6741696
Sample ID : BH109

Depth : 2.10 - 6.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6491334-6741696
Date Acquired : 09/01/13 19:26:52 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.009





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

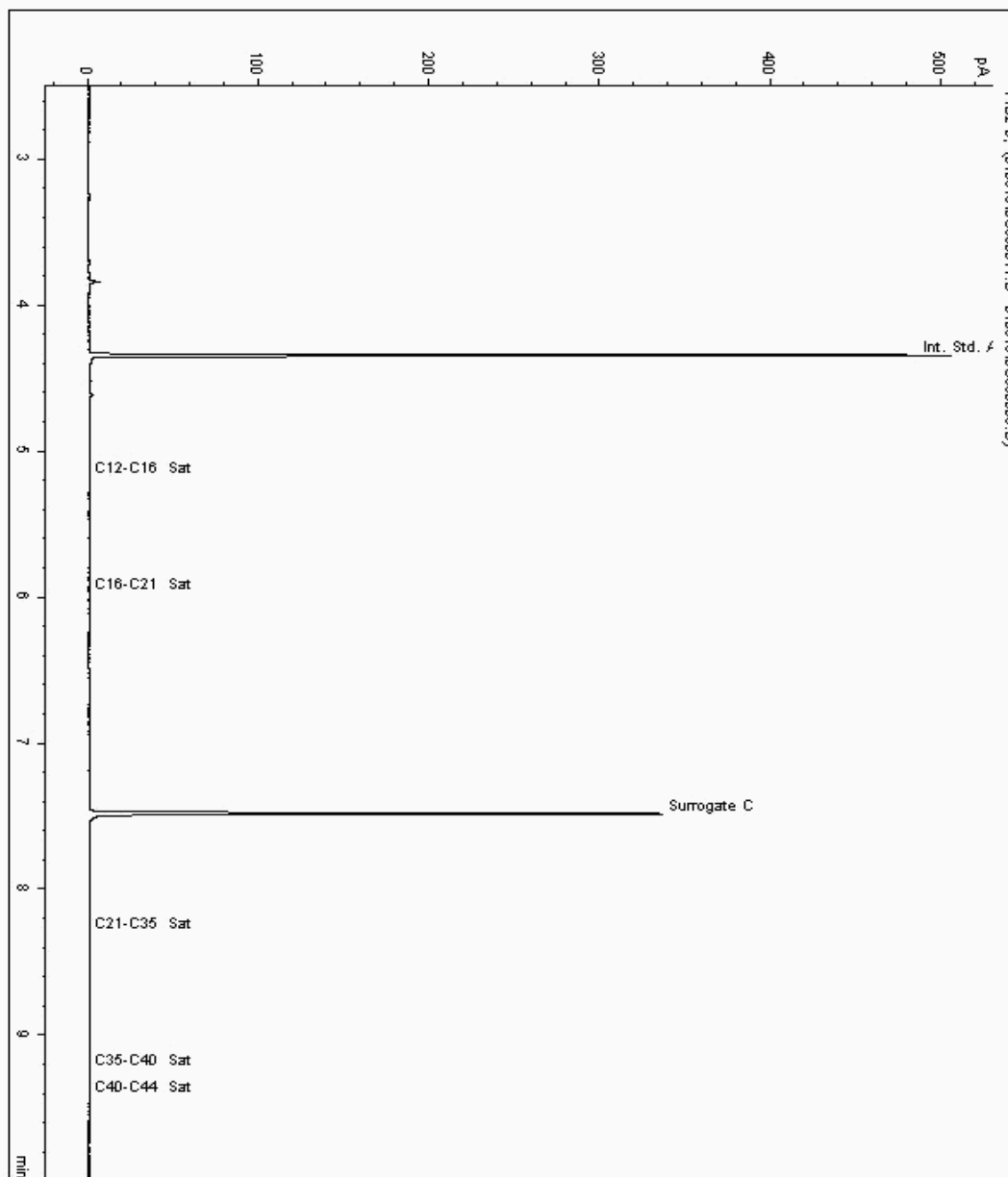
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6741698
Sample ID : BH106

Depth : 6.00 - 7.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6491137-6741698
Date Acquired : 09/01/13 19:45:29 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

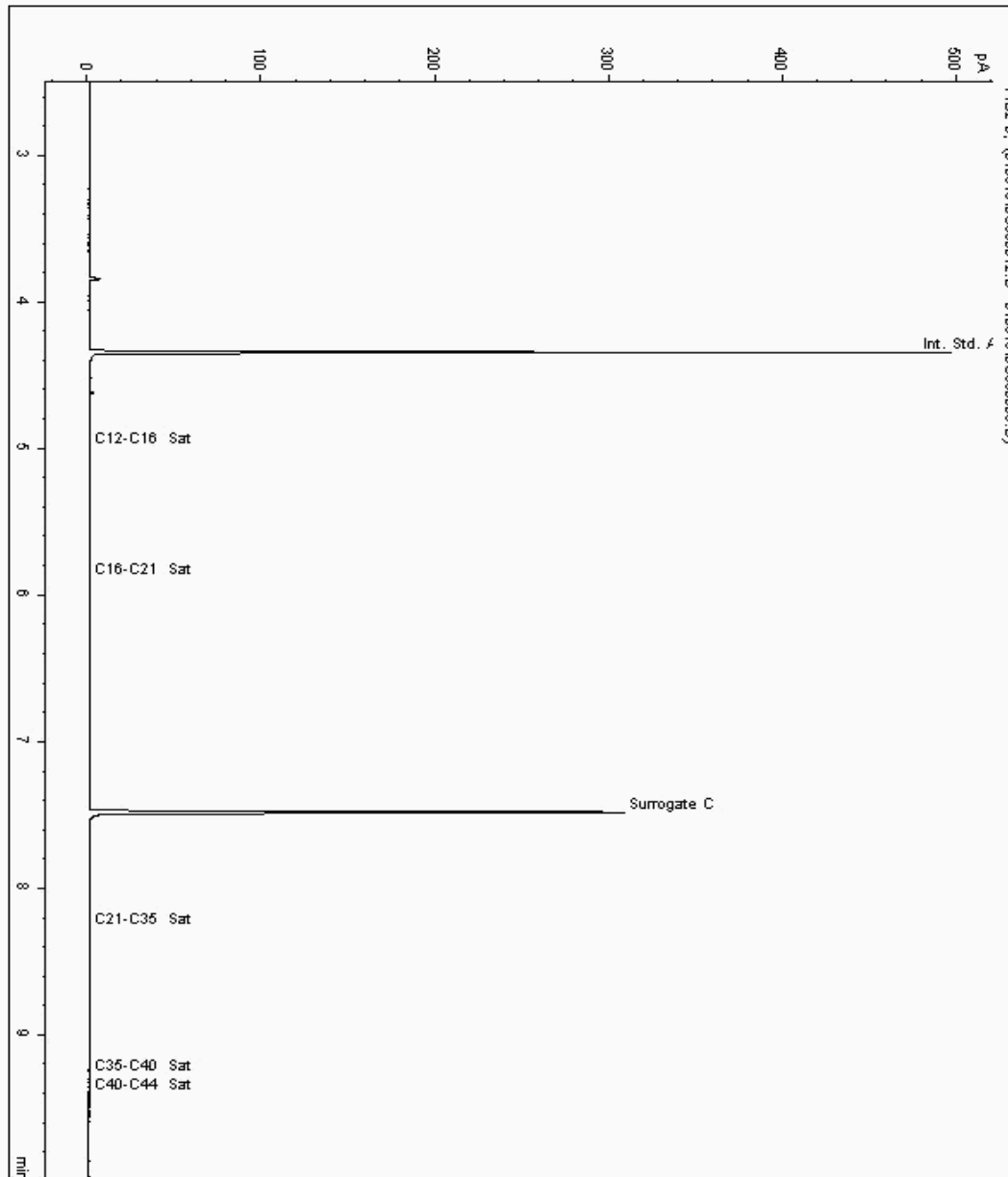
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6741701
Sample ID : BH107

Depth : 2.50 - 2.90

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6491200-6741701
Date Acquired : 09/01/13 20:04:08 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

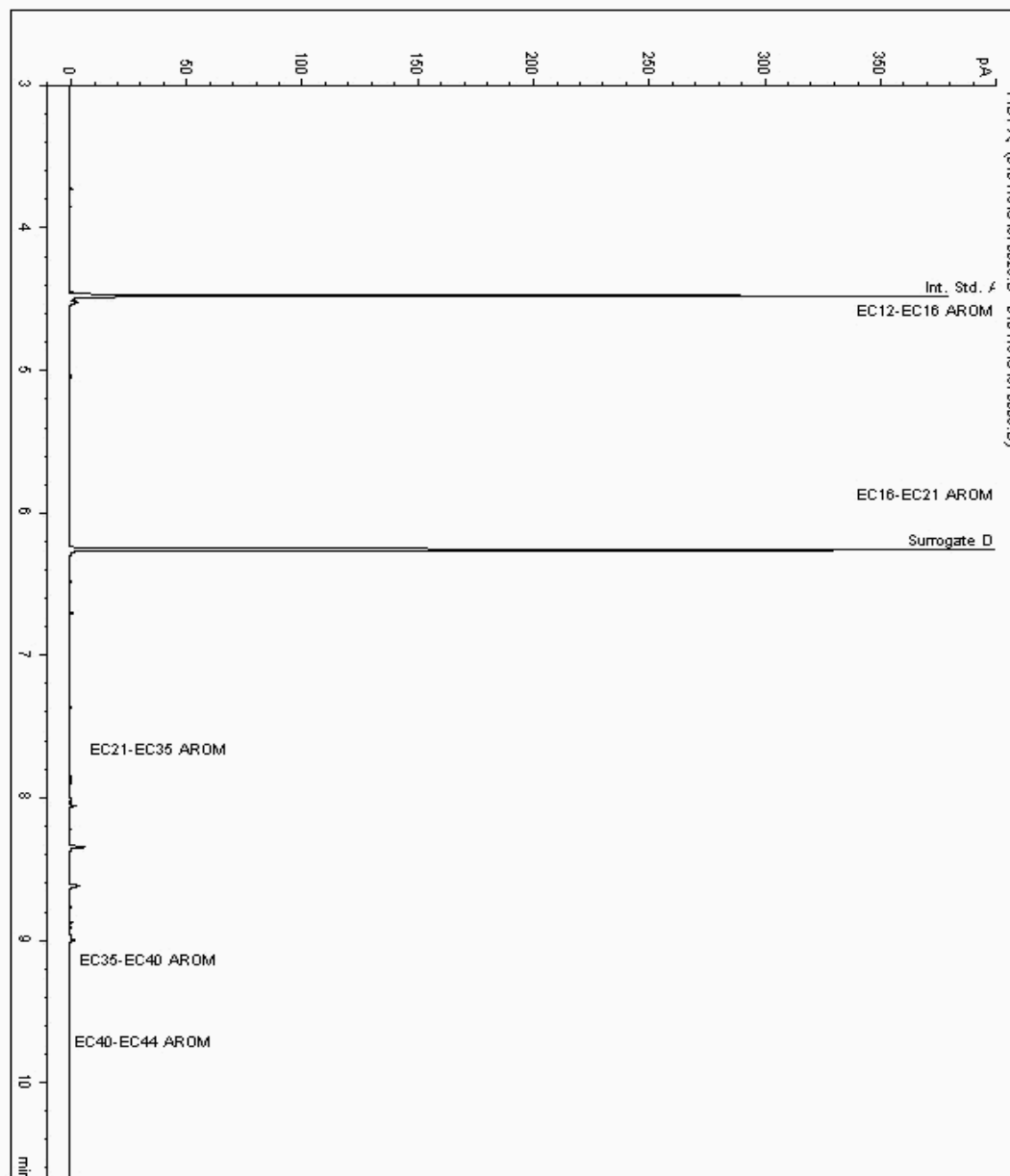
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 6730355
Sample ID : BH107

Depth : 0.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6469915-6730355
Date Acquired : 07/01/13 12:40:00 PM
Units : ppb
Dilution:





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

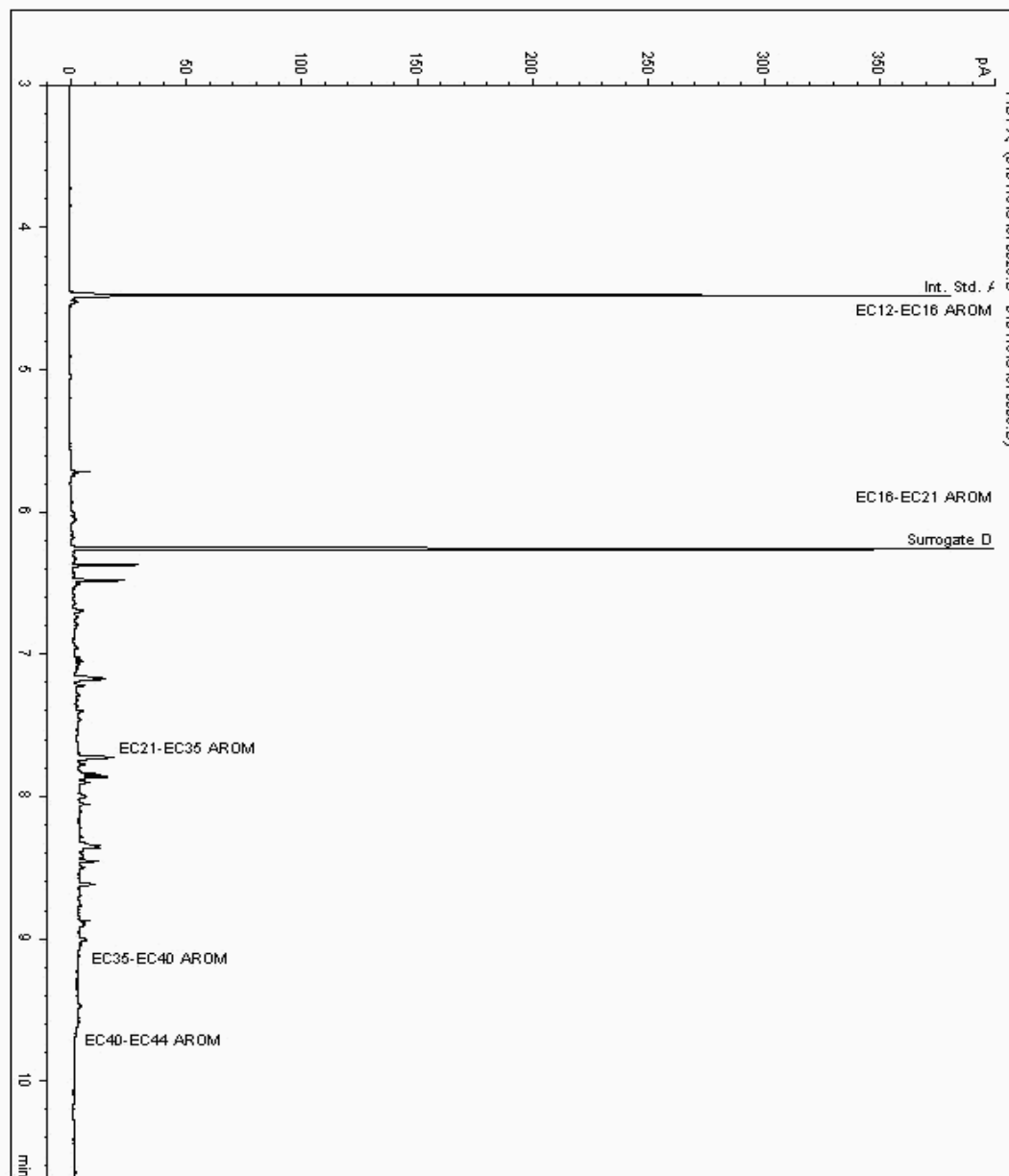
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 6730746
Sample ID : BH108

Depth : 0.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6469950-6730746
Date Acquired : 07/01/13 11:49:42 PM
Units : ppb
Dilution:





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

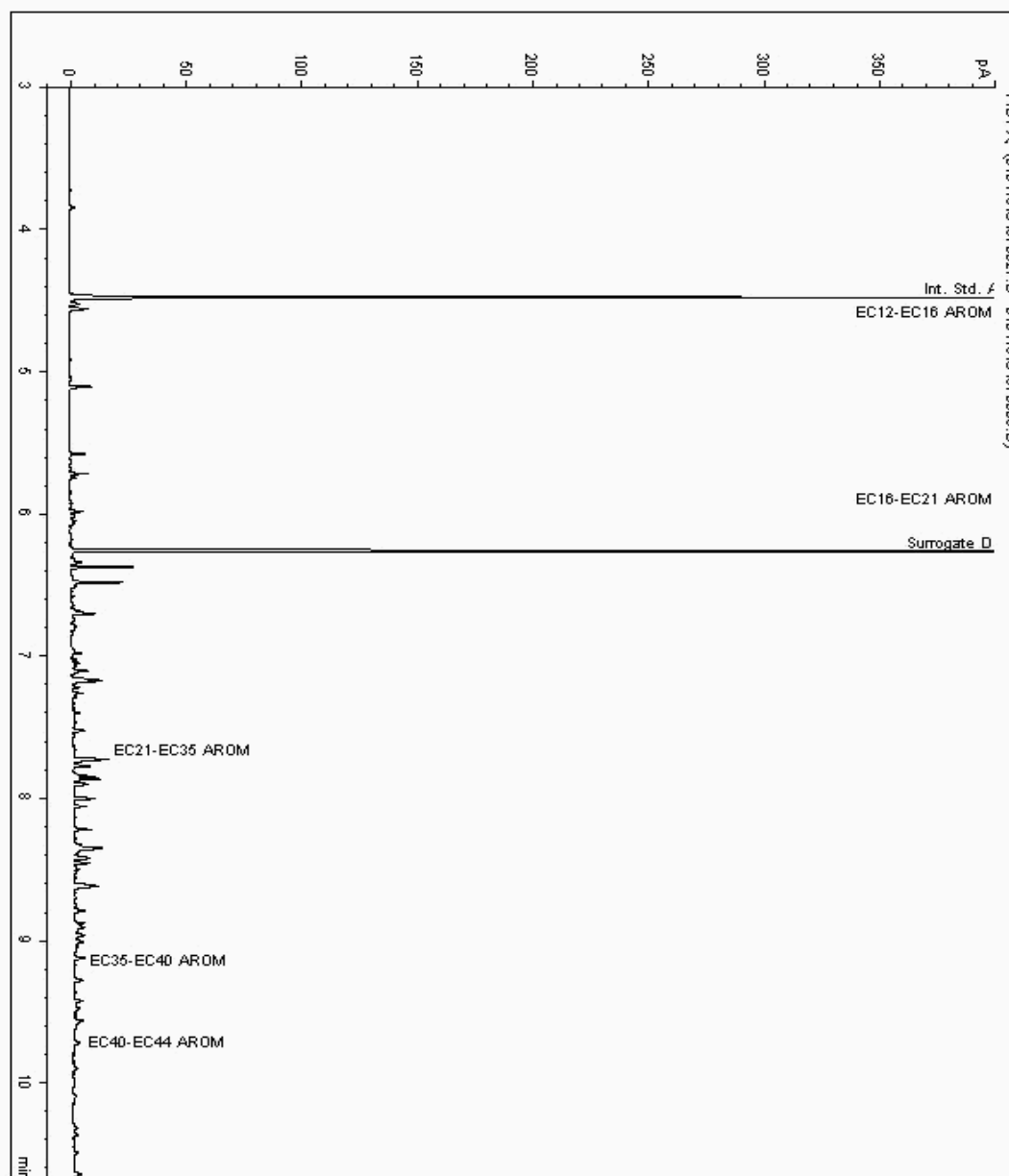
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 6730770
Sample ID : BH109

Depth : 0.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6469985-6730770
Date Acquired : 07/01/13 12:09:36 PM
Units : ppb
Dilution:





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

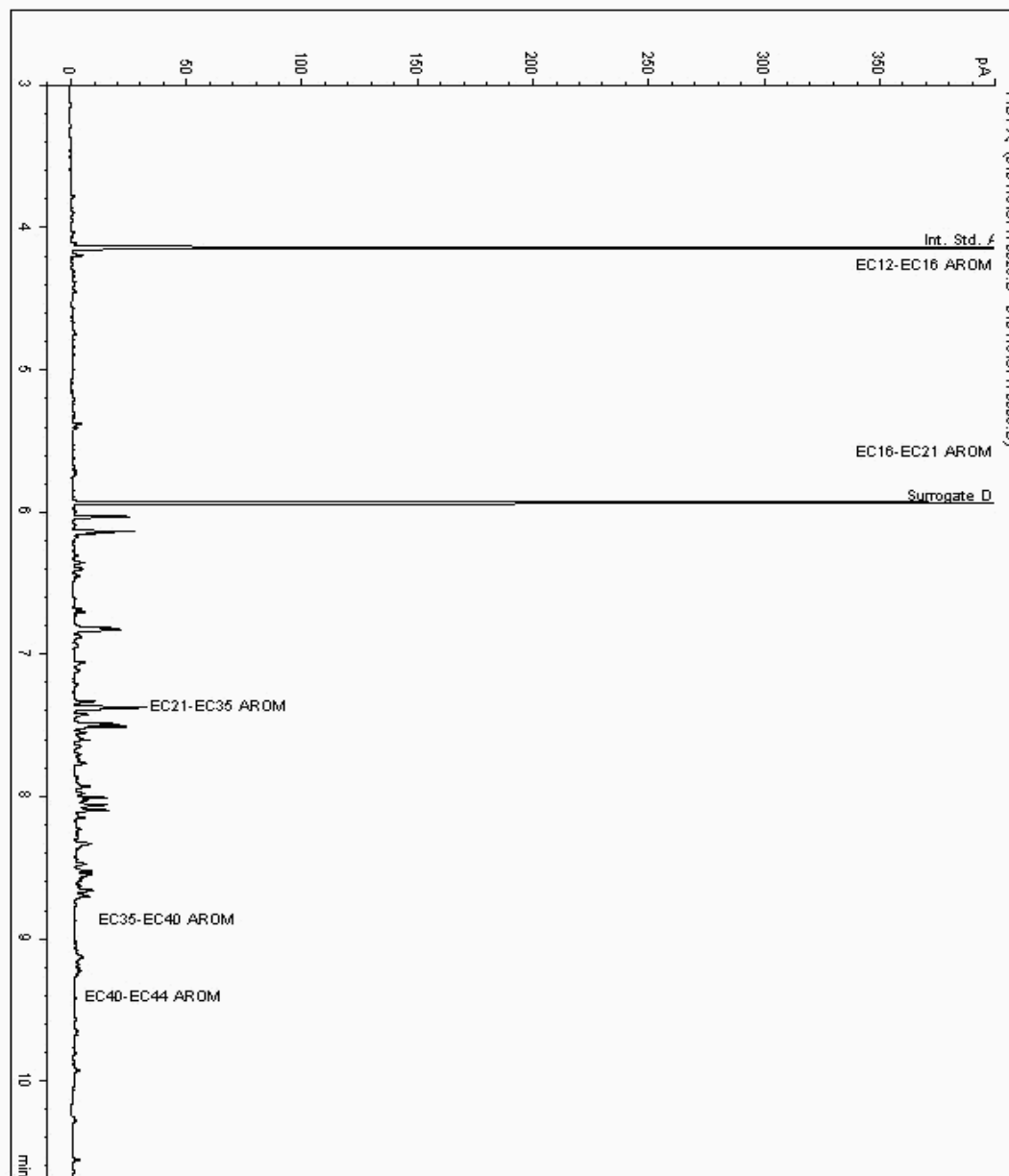
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 6731268
Sample ID : BH106

Depth : 0.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6469841-6731268
Date Acquired : 04/01/2013 15:54:30 PM
Units : ppb
Dilution:





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

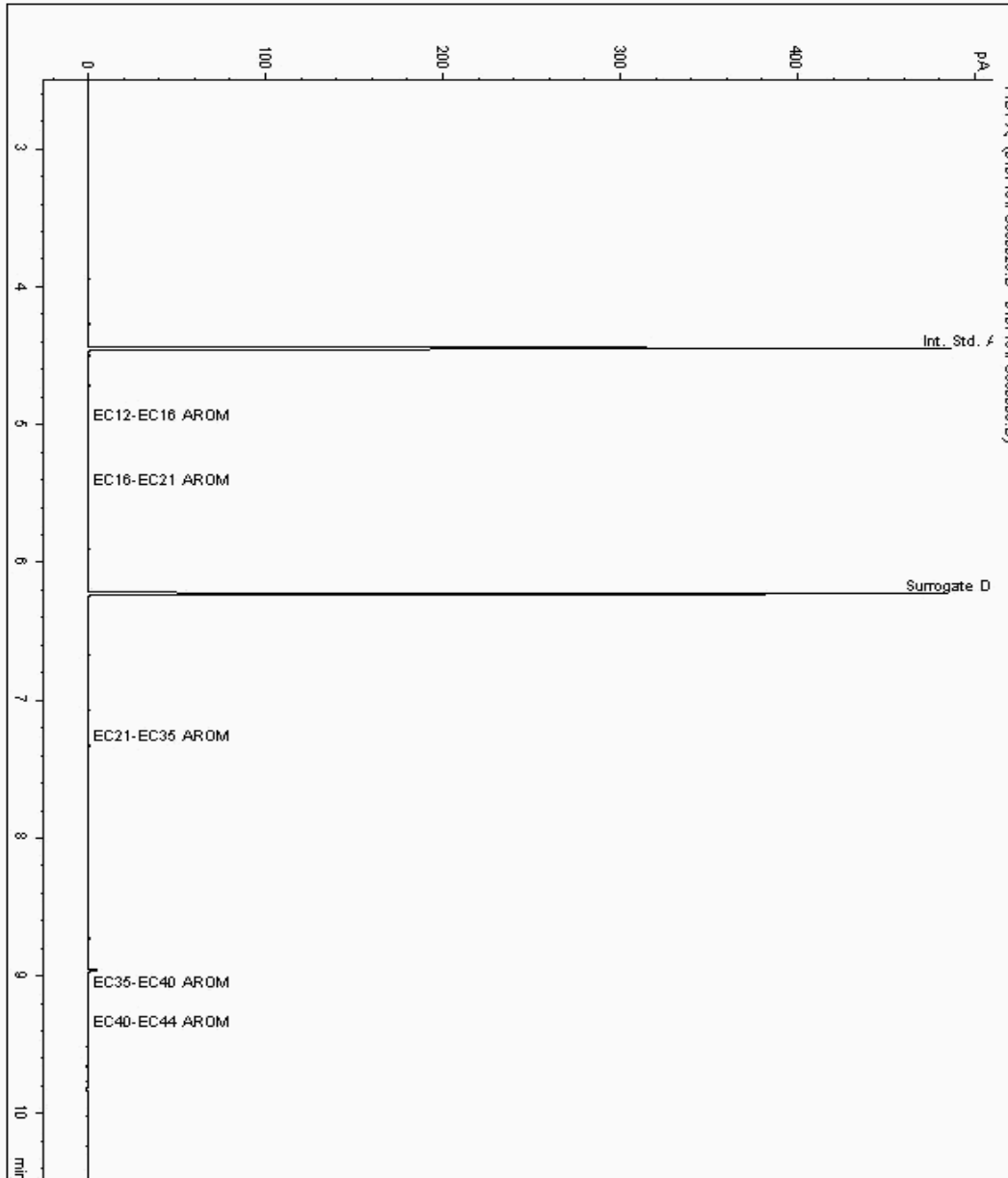
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6732029
Sample ID : BH106

Depth : 1.00 - 6.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6470023-6732029
Date Acquired : 08/01/13 02:04:28 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

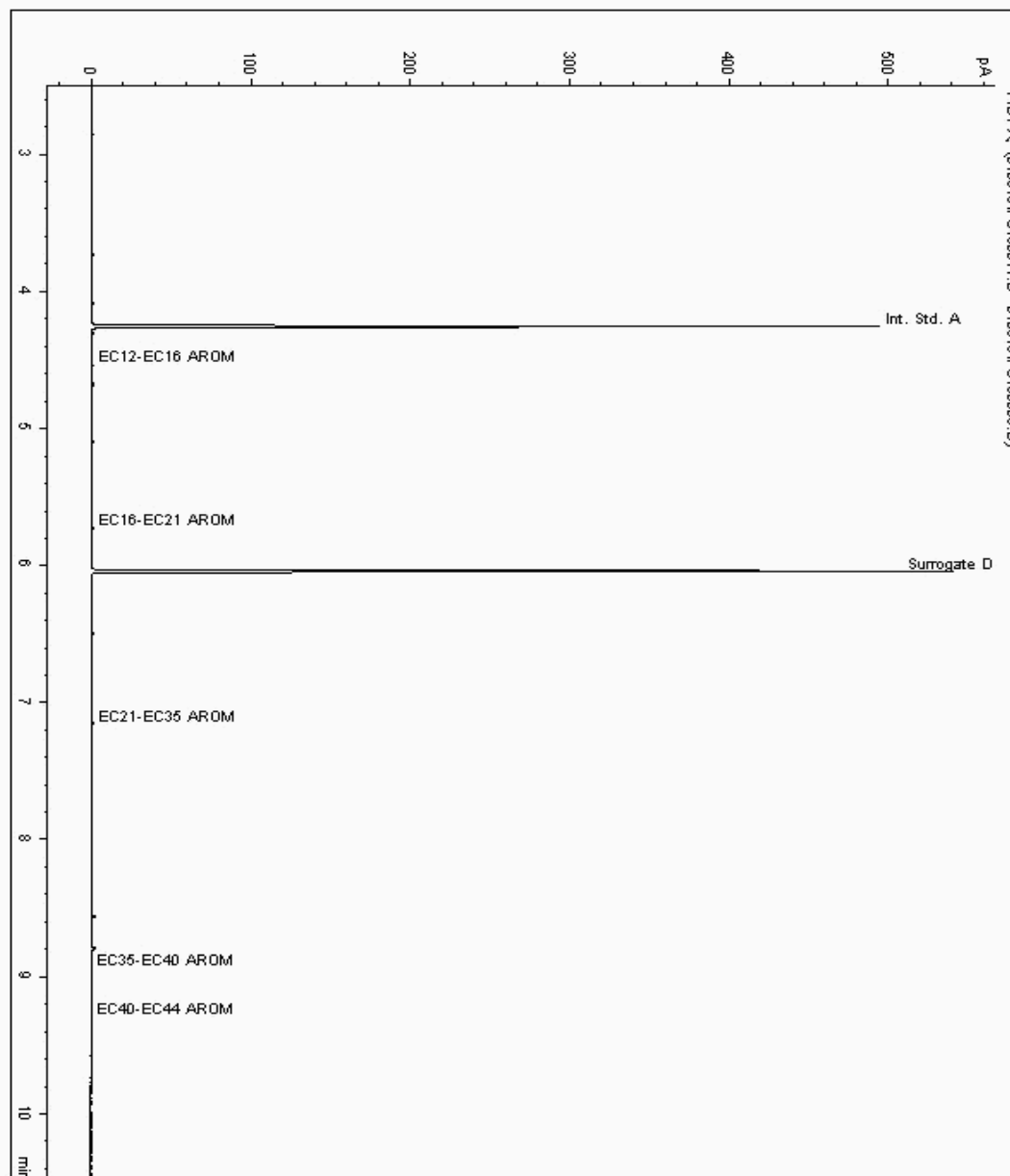
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6739111
Sample ID : BH107

Depth : 2.50 - 2.90

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6470069-6739111
Date Acquired : 08/01/2013 20:15:10 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

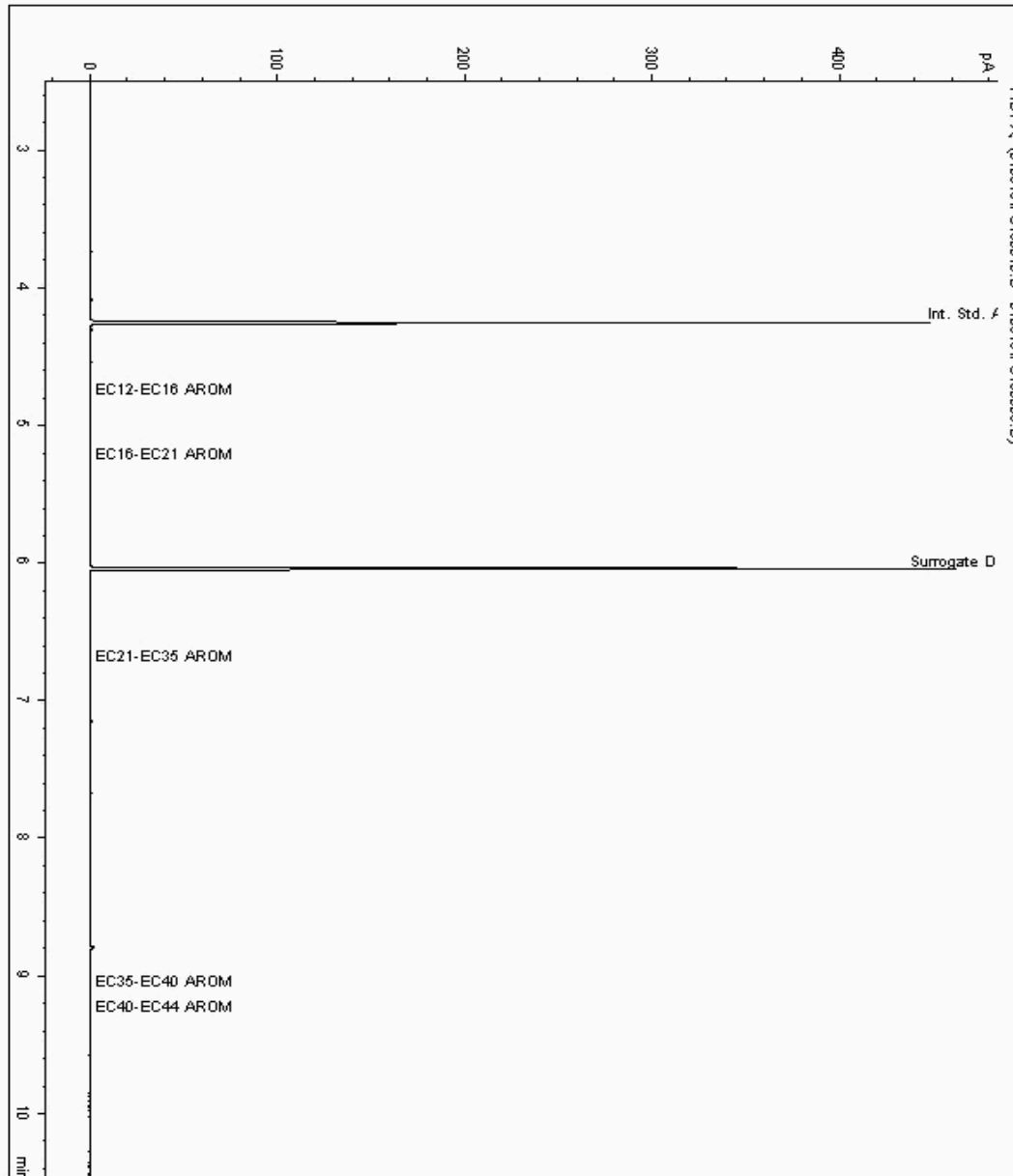
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6739119
Sample ID : BH109

Depth : 2.10 - 6.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6470124-6739119
Date Acquired : 08/01/2013 19:56:10 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

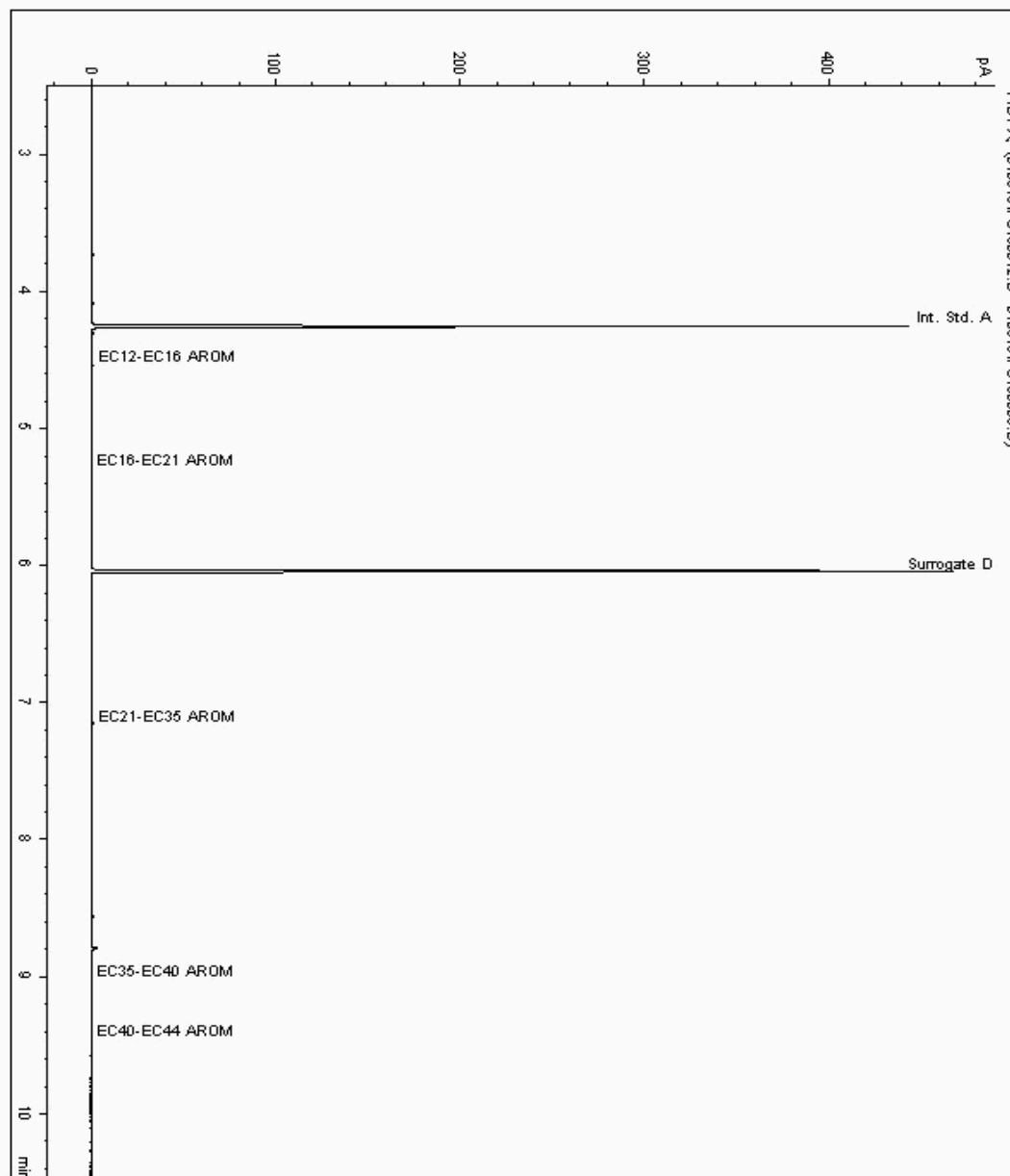
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6739121
Sample ID : BH107

Depth : 3.80 - 8.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6470088-6739121
Date Acquired : 08/01/2013 20:34:25 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

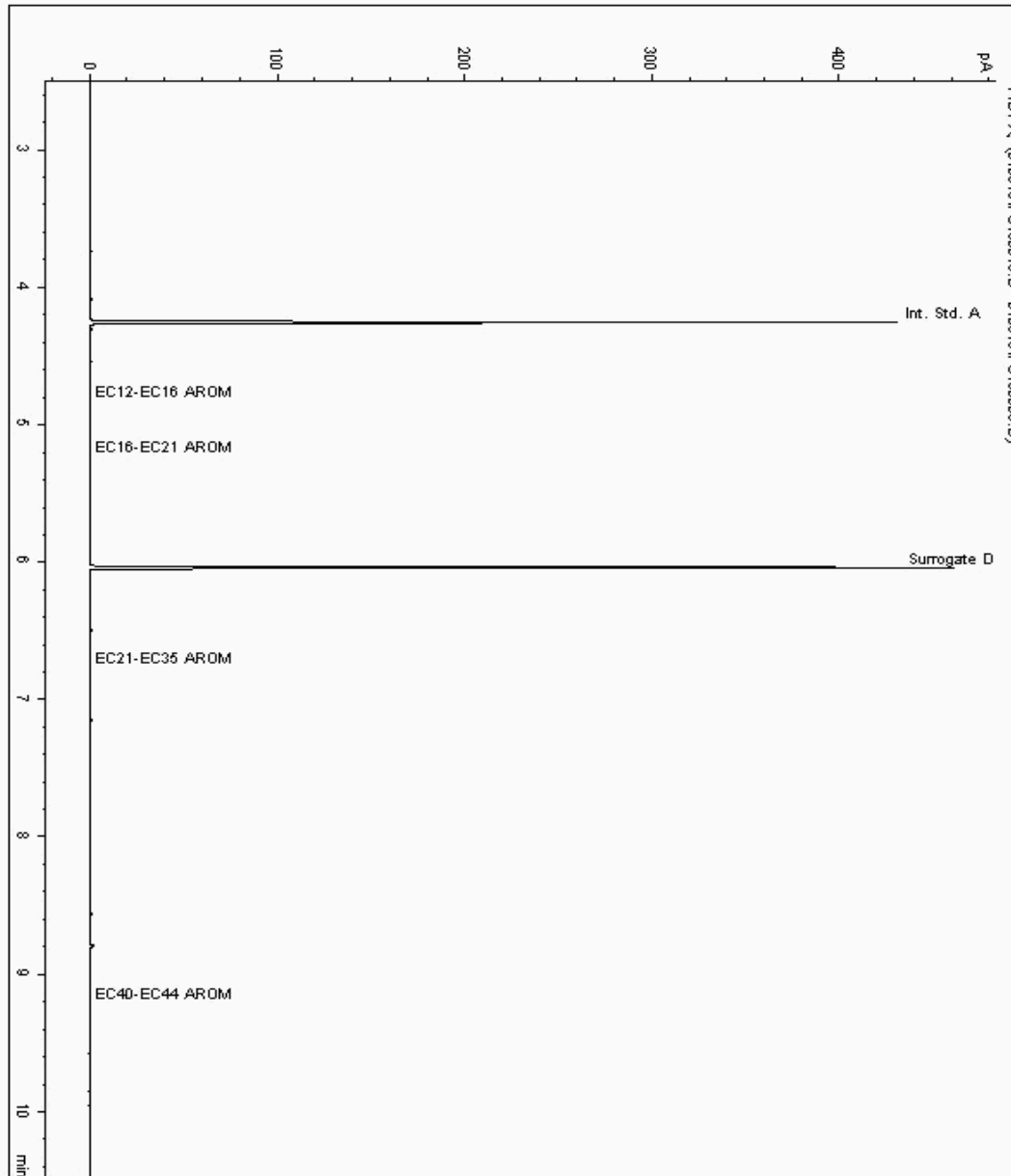
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6739126
Sample ID : BH106

Depth : 6.00 - 7.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6470050-6739126
Date Acquired : 08/01/2013 20:53:28 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.011





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

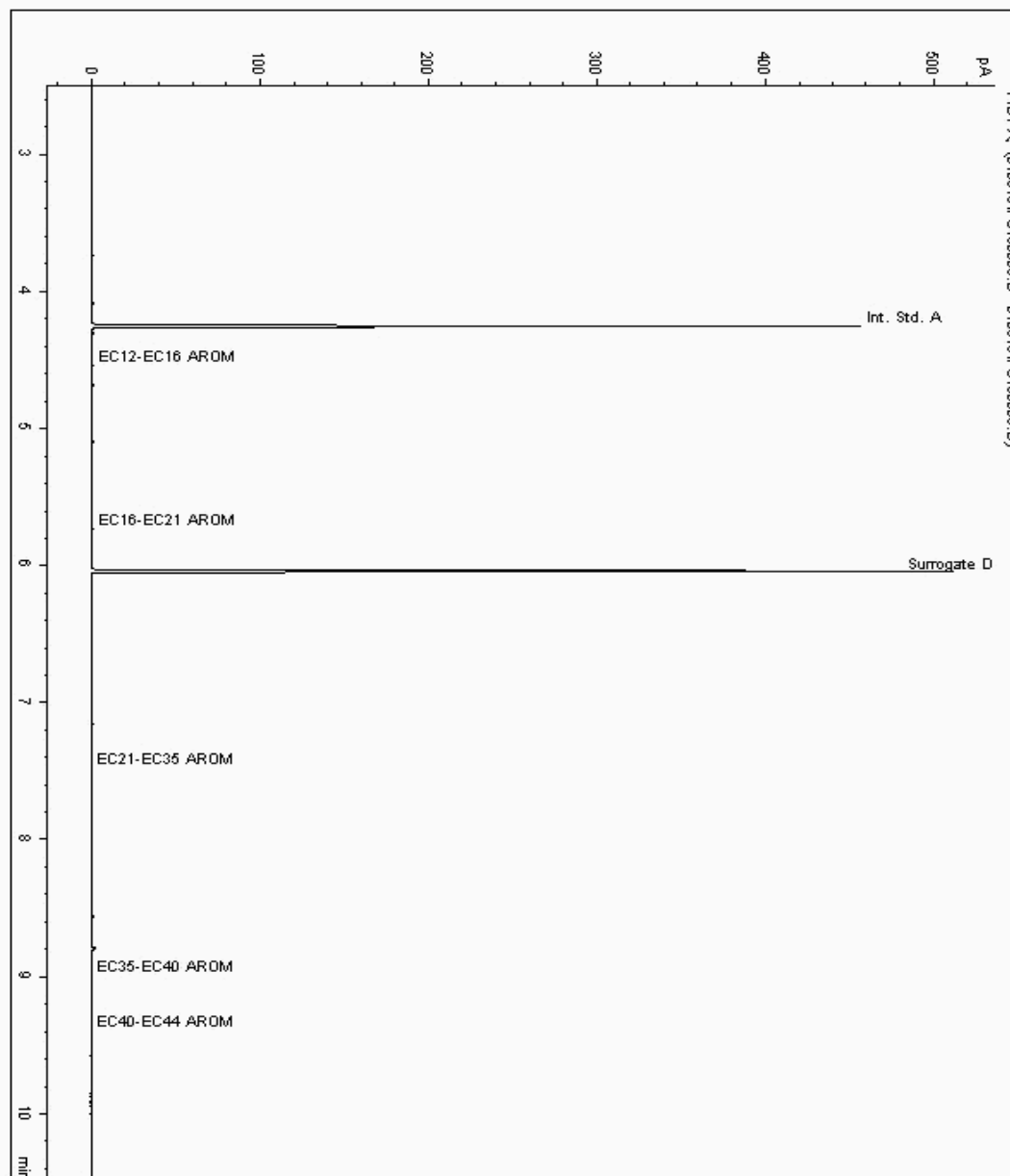
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6739129
Sample ID : BH108

Depth : 1.10 - 6.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6470109-6739129
Date Acquired : 08/01/2013 19:37:10 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

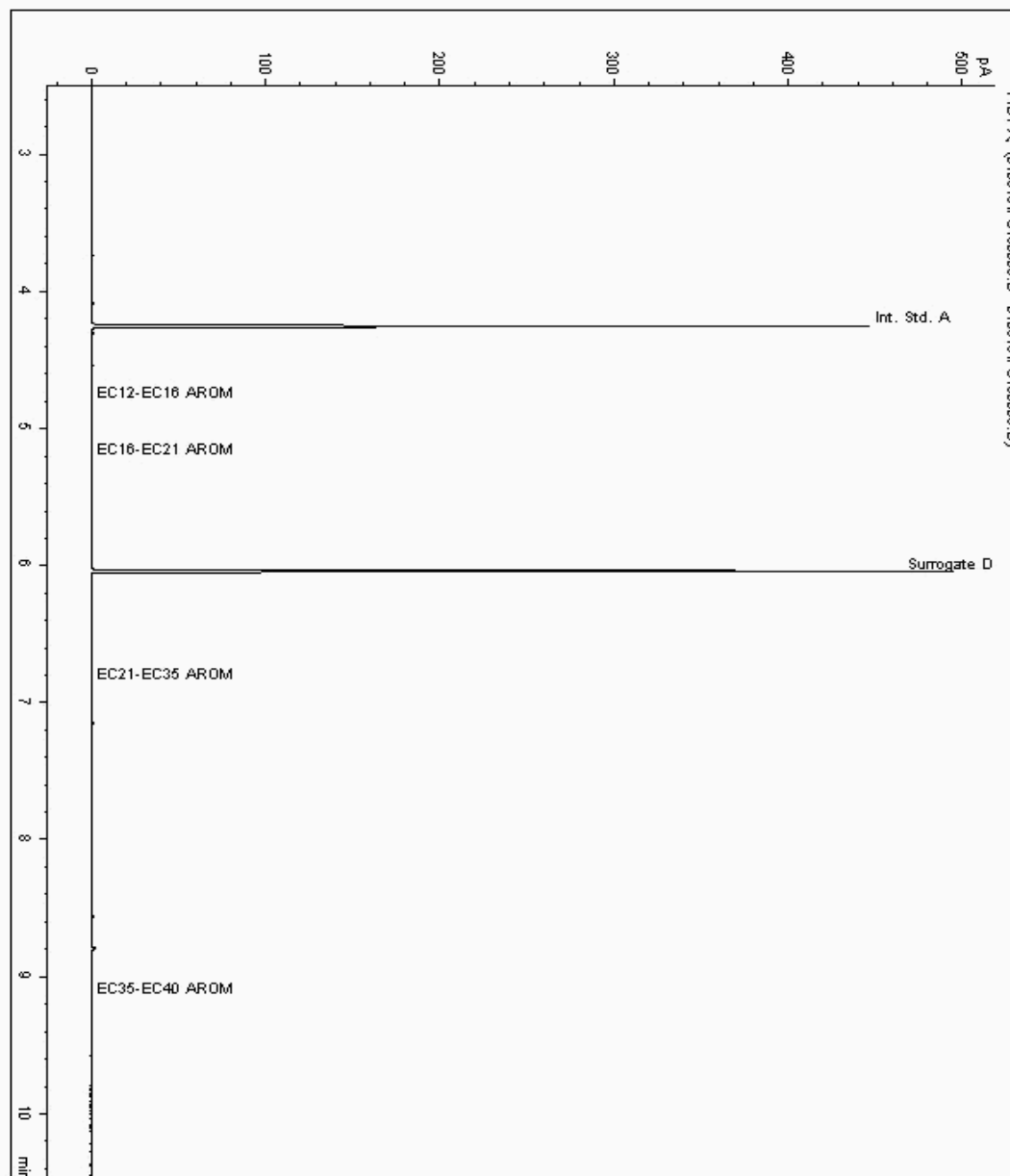
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6739165
Sample ID : BH106

Depth : 1.00 - 6.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6488427-6739165
Date Acquired : 08/01/2013 19:18:12 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

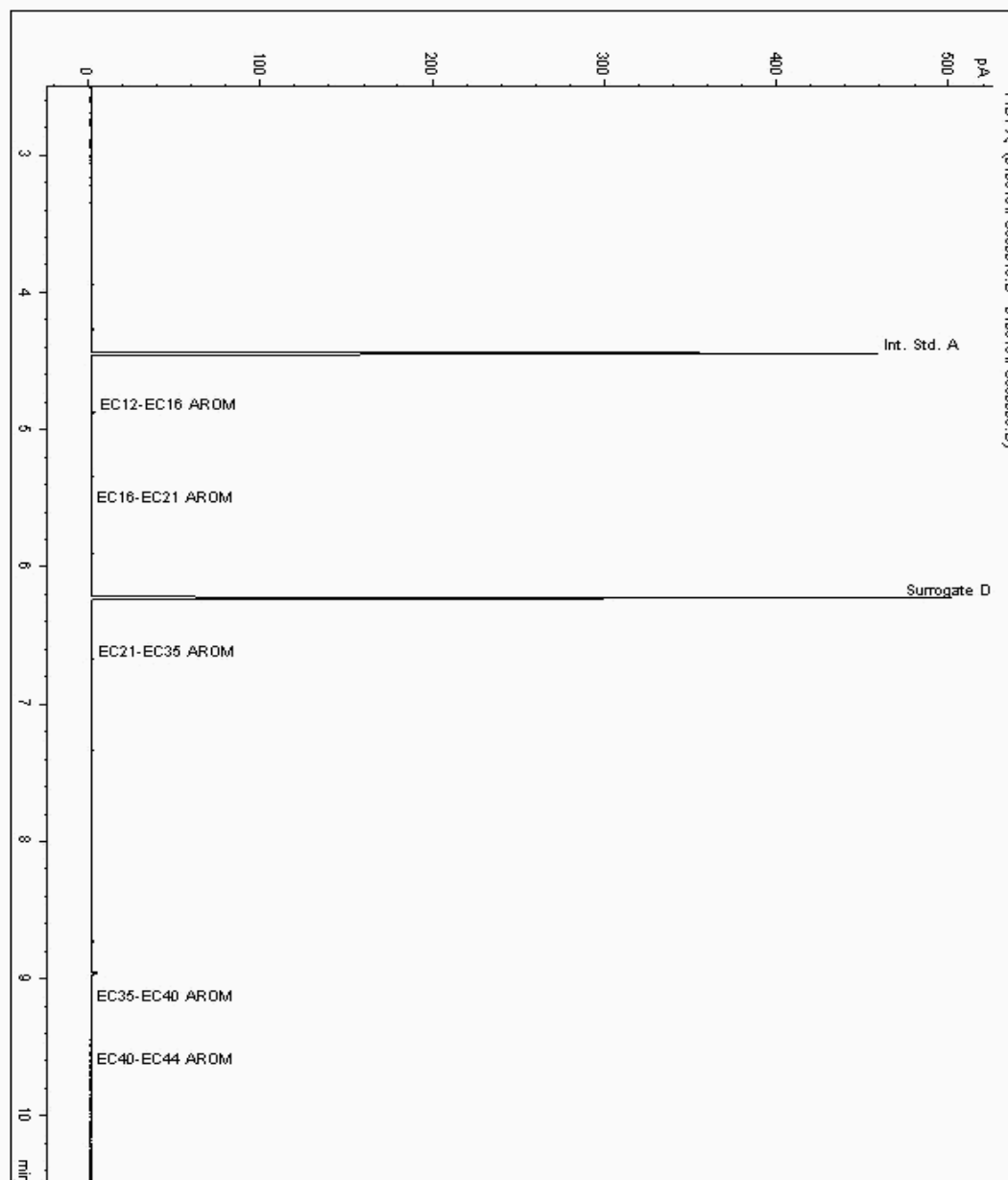
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6741688
Sample ID : BH108

Depth : 1.10 - 6.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6491308-6741688
Date Acquired : 09/01/13 20:23:01 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

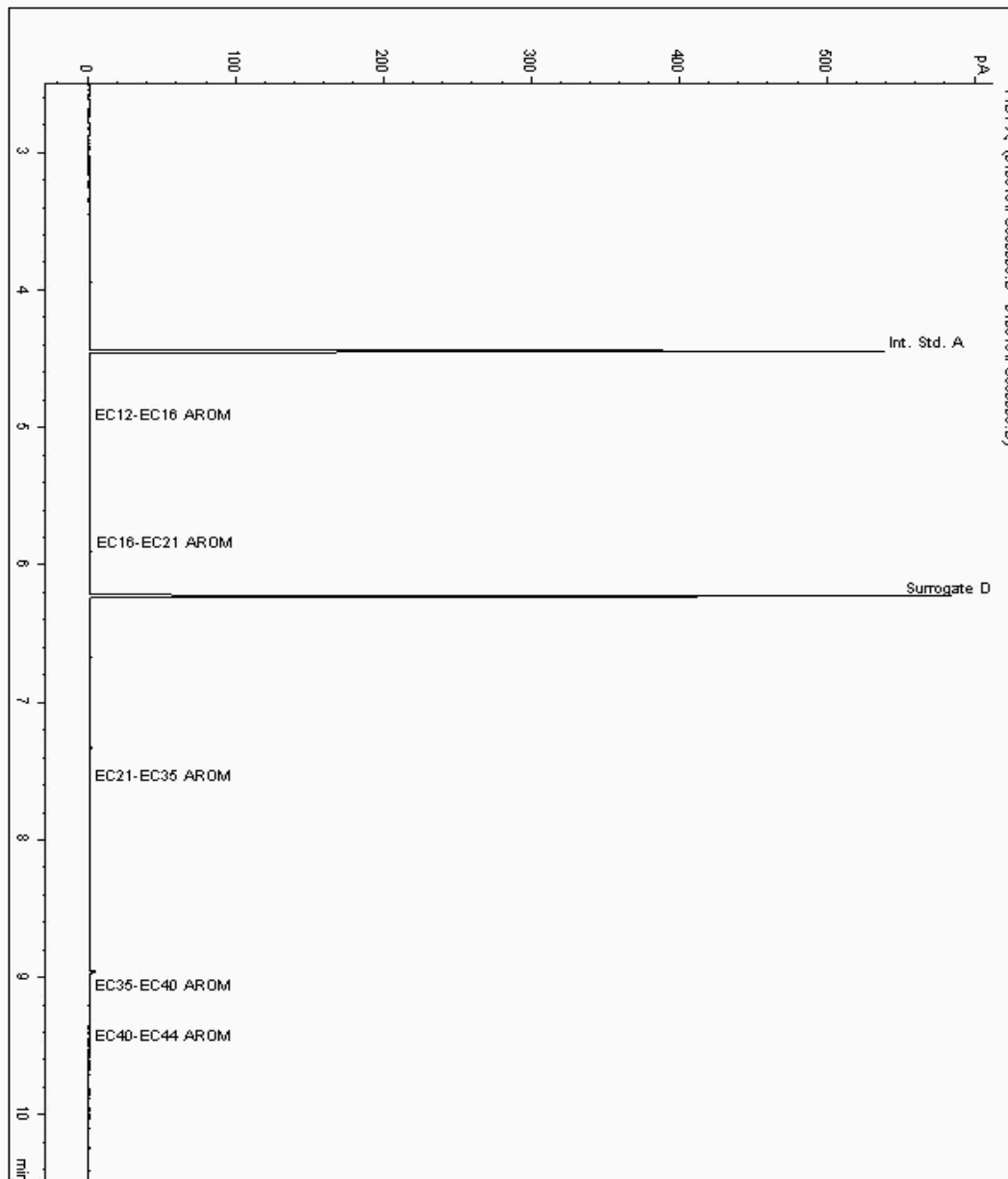
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6741693
Sample ID : BH107

Depth : 3.80 - 8.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6491256-6741693
Date Acquired : 09/01/13 19:08:14 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

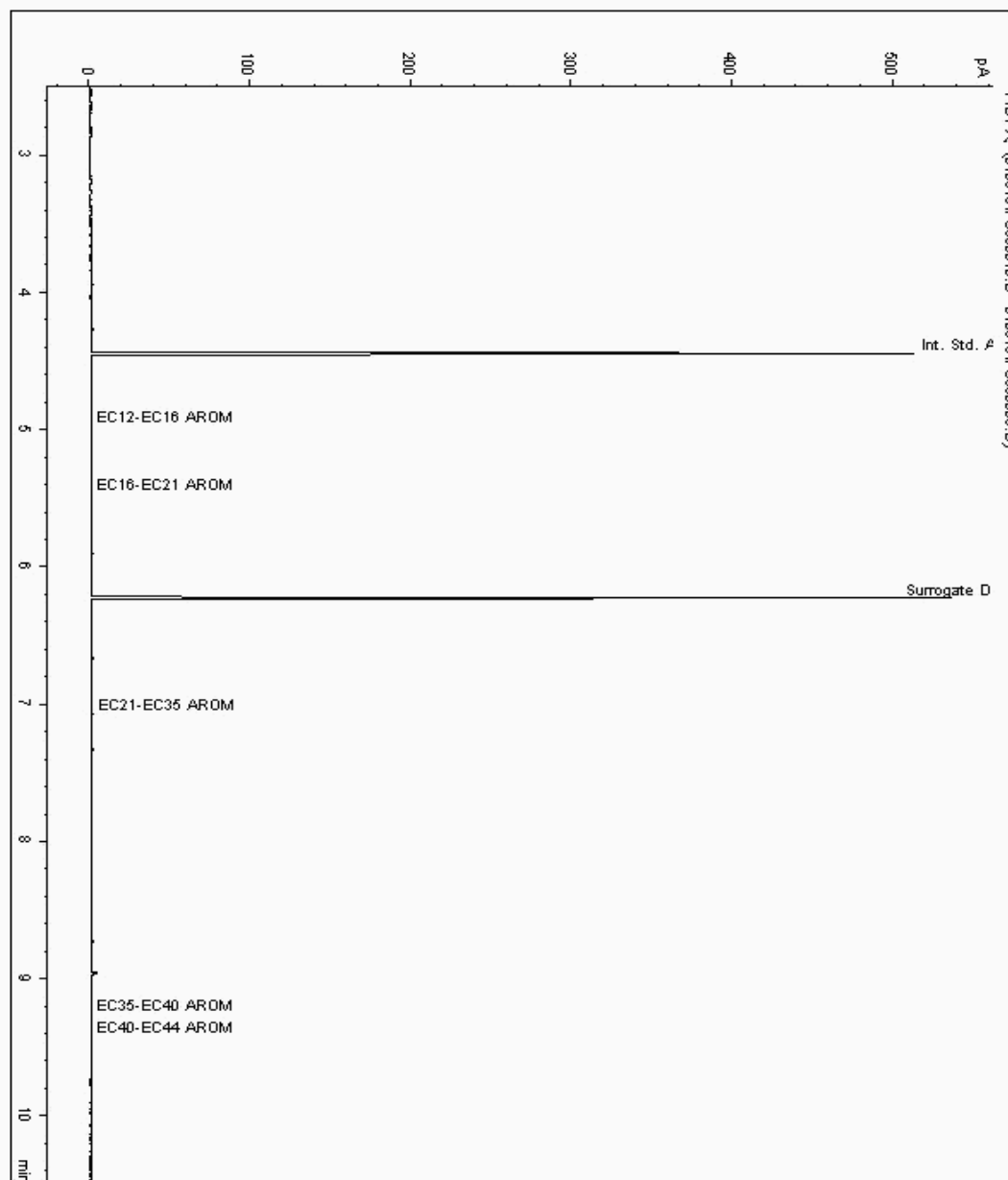
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6741696
Sample ID : BH109

Depth : 2.10 - 6.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6491335-6741696
Date Acquired : 09/01/13 19:26:52 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.009





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

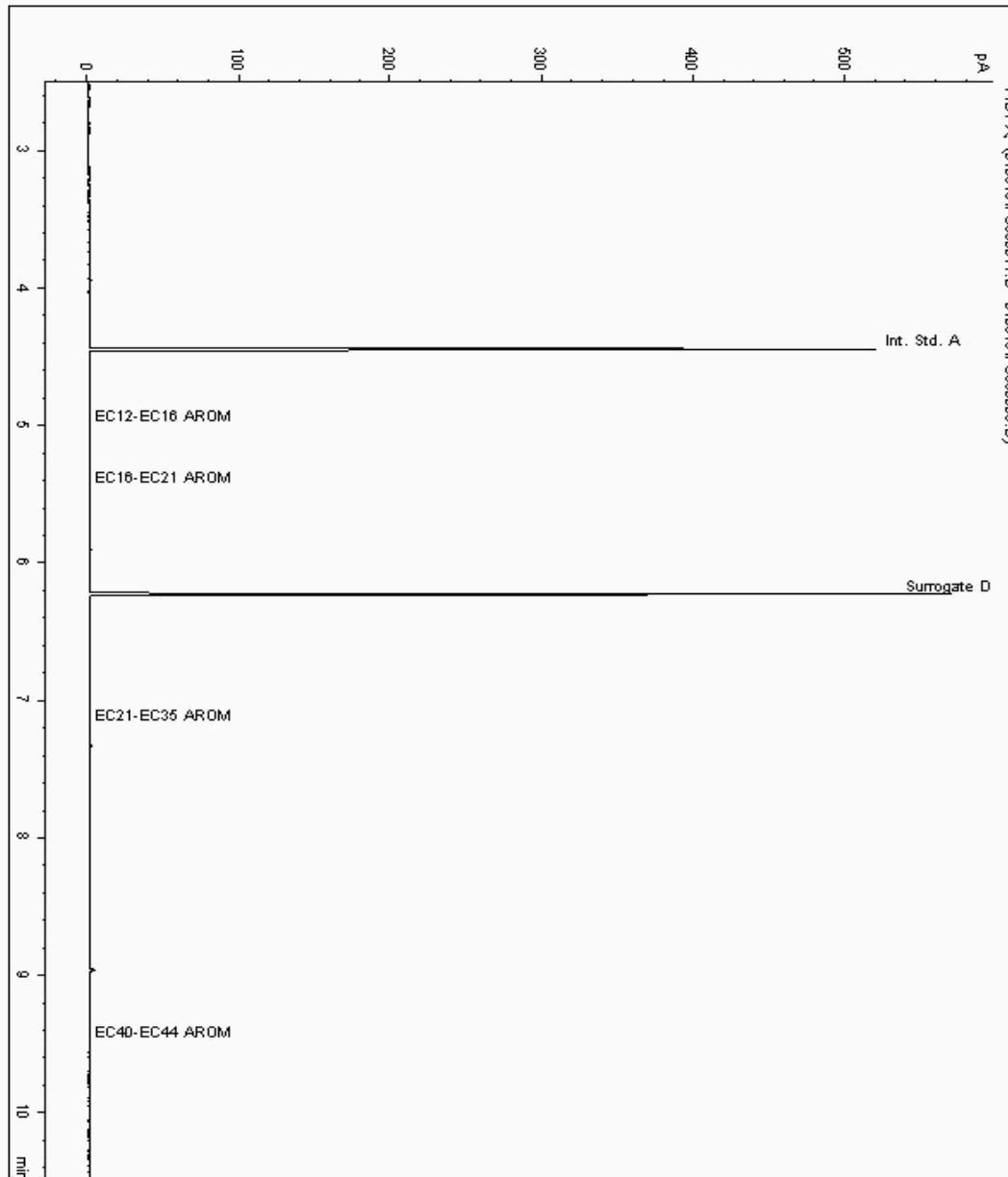
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6741698
Sample ID : BH106

Depth : 6.00 - 7.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6491138-6741698
Date Acquired : 09/01/13 19:45:29 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

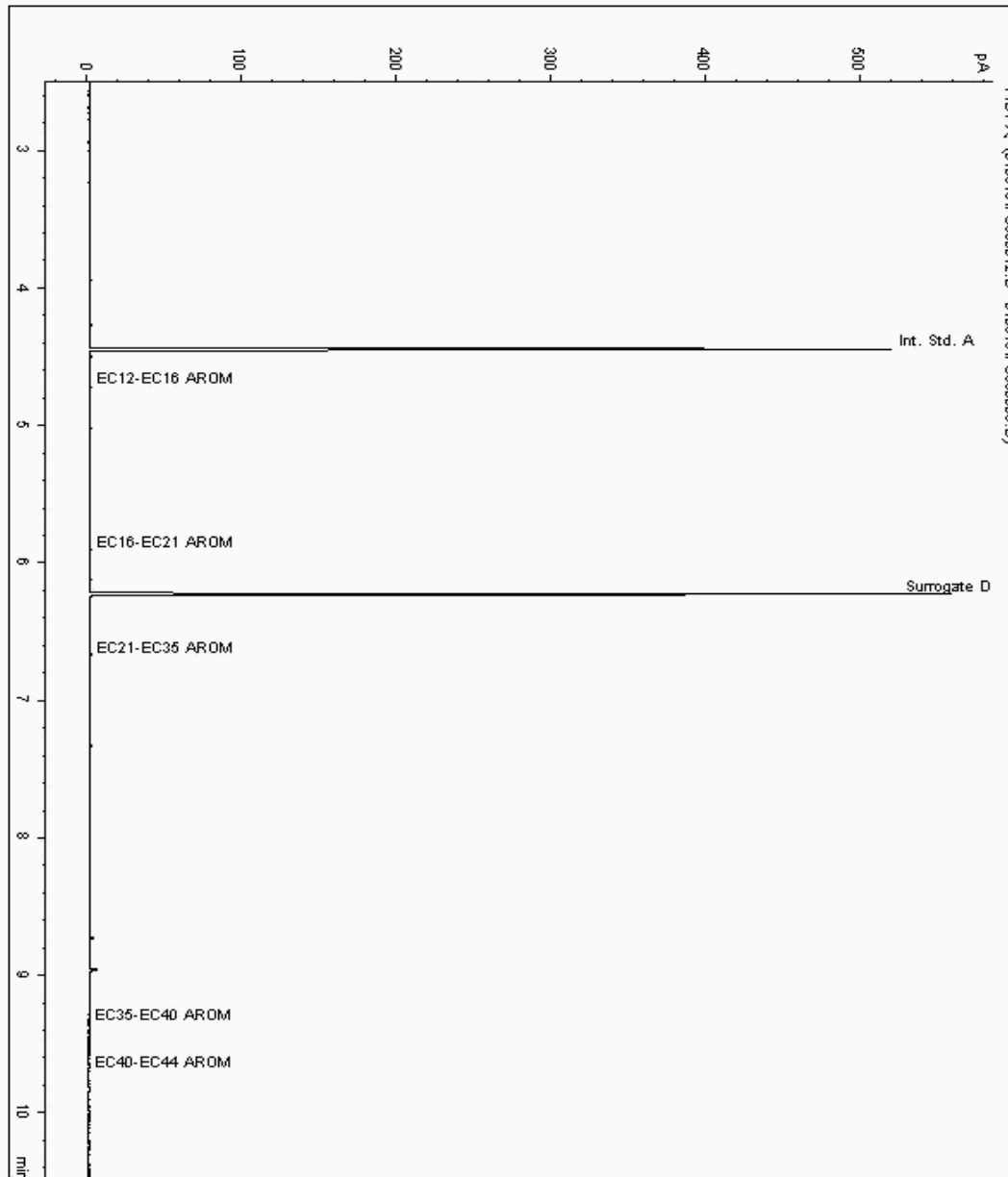
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6741701
Sample ID : BH107

Depth : 2.50 - 2.90

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6491201-6741701
Date Acquired : 09/01/13 20:04:08 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

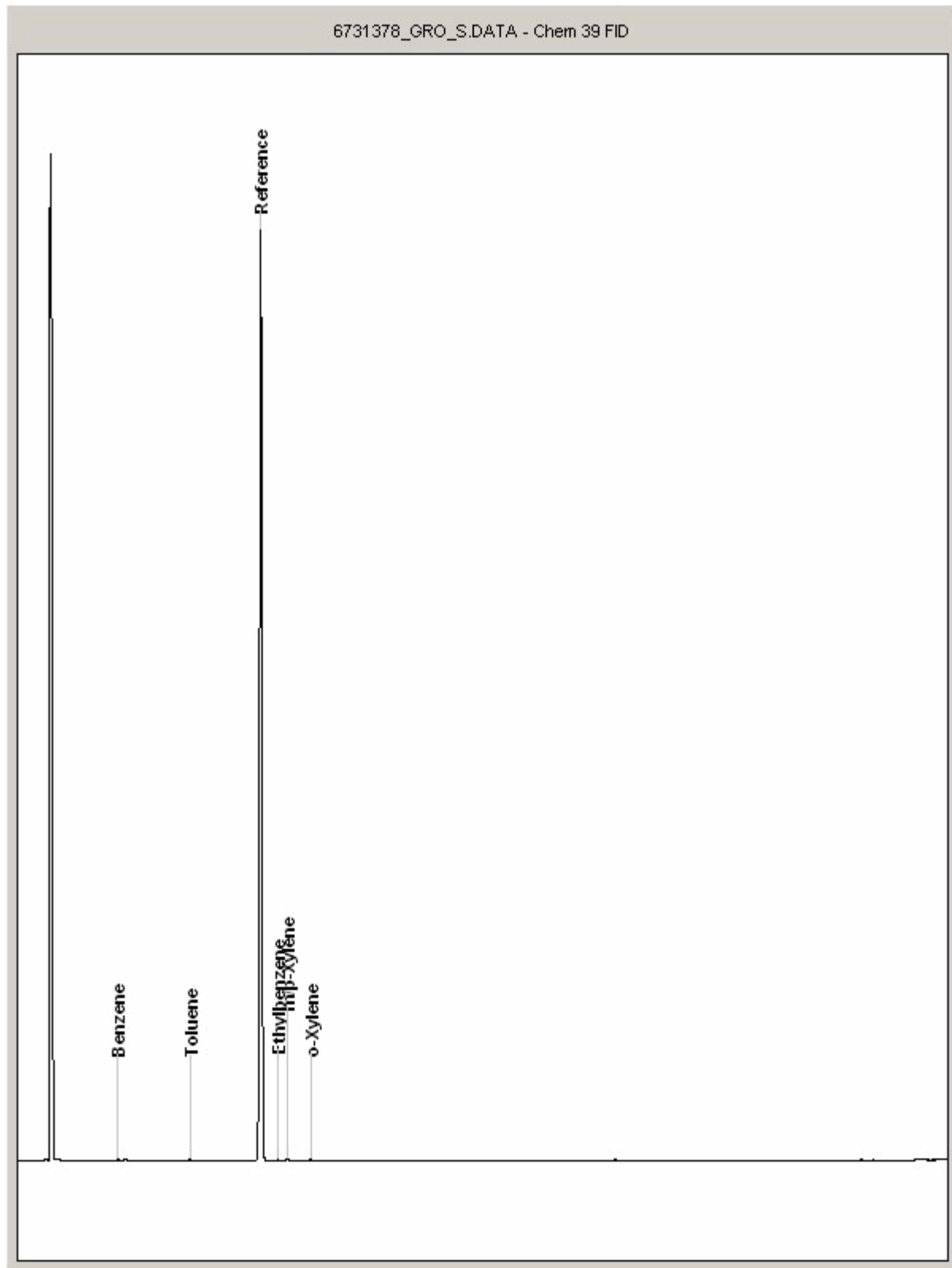
Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 6731378
Sample ID : BH107

Depth : 0.50





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

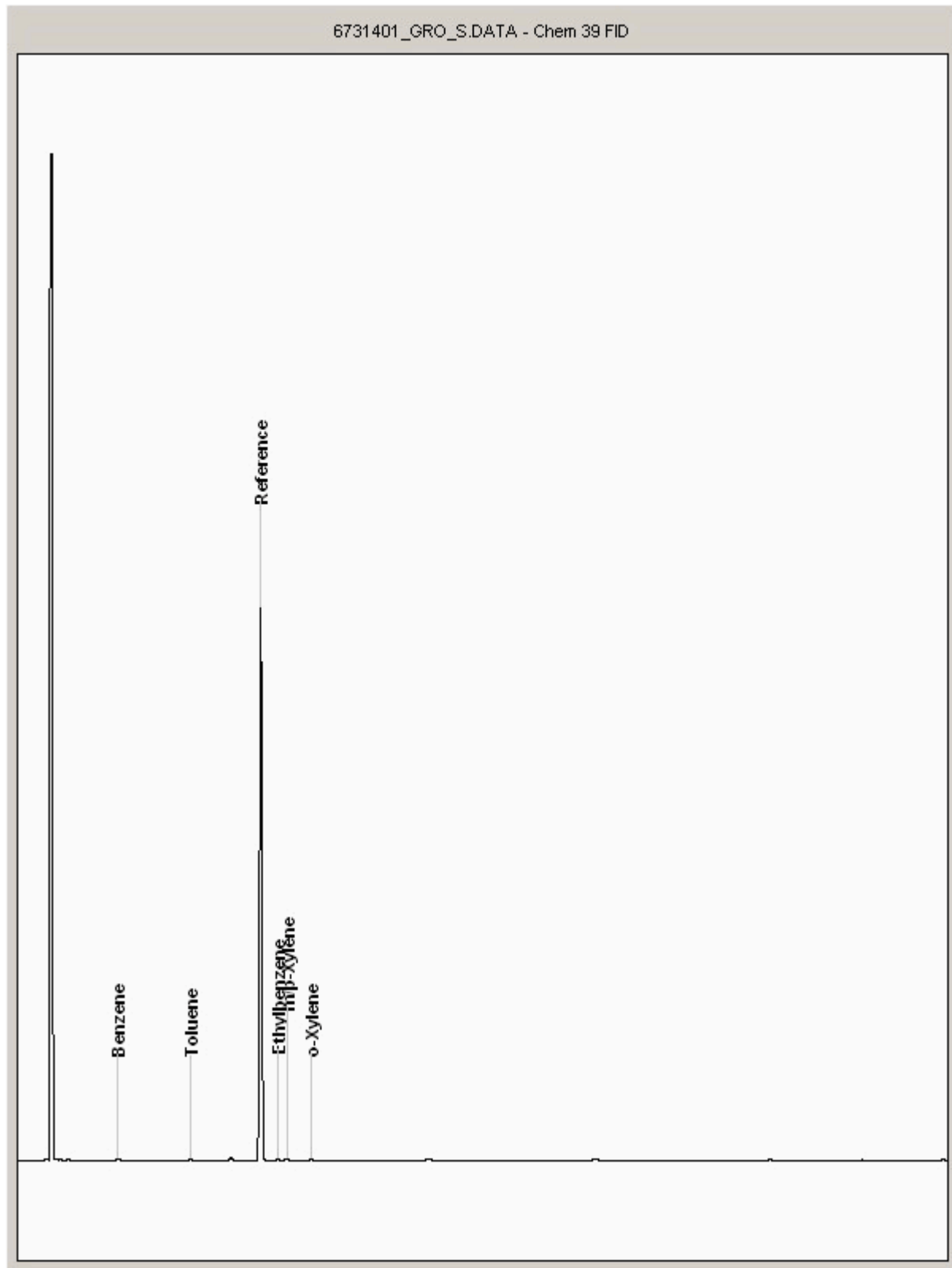
Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 6731401
Sample ID : BH108

Depth : 0.50





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

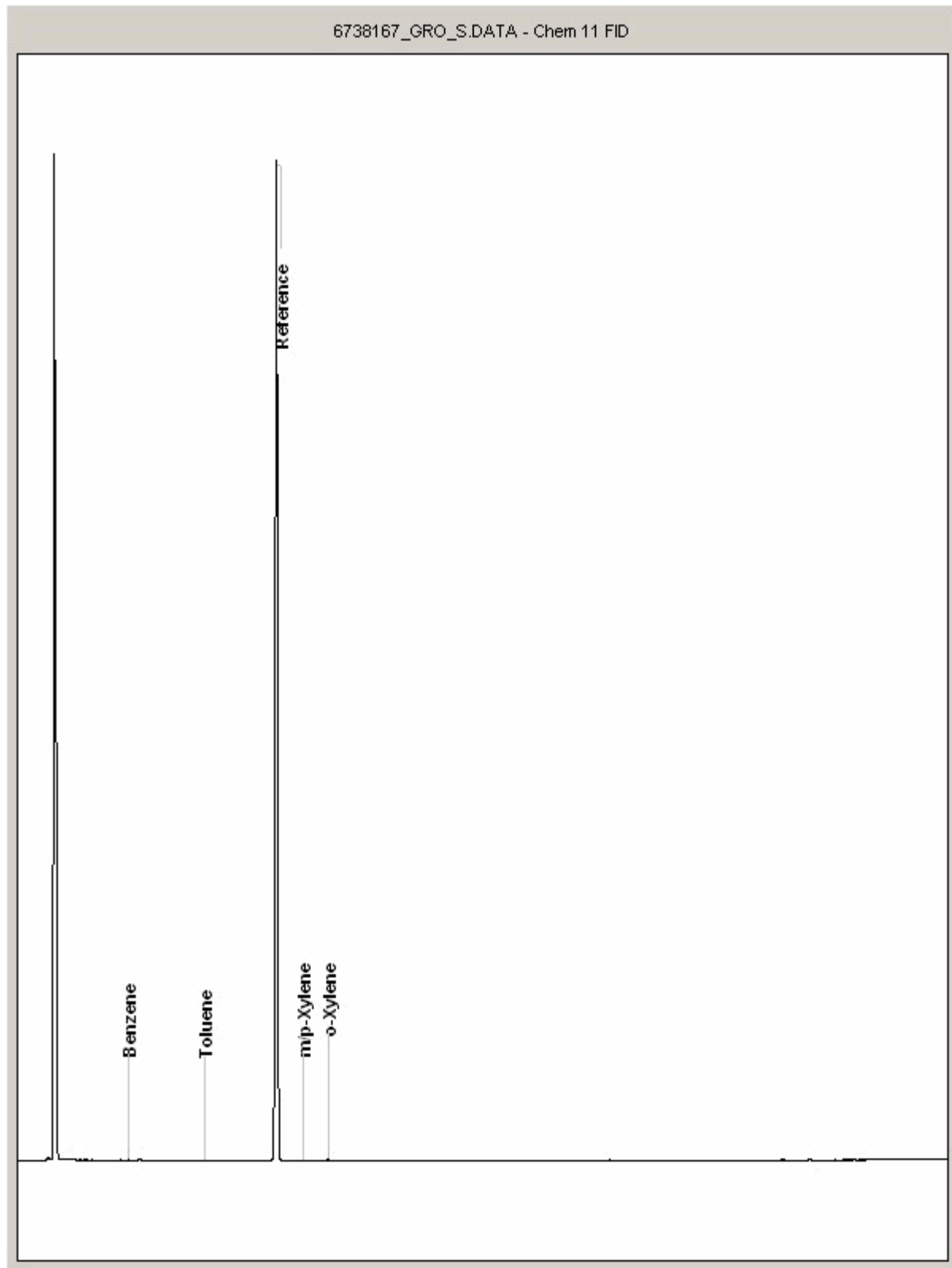
Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 6738167
Sample ID : BH106

Depth : 0.50





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

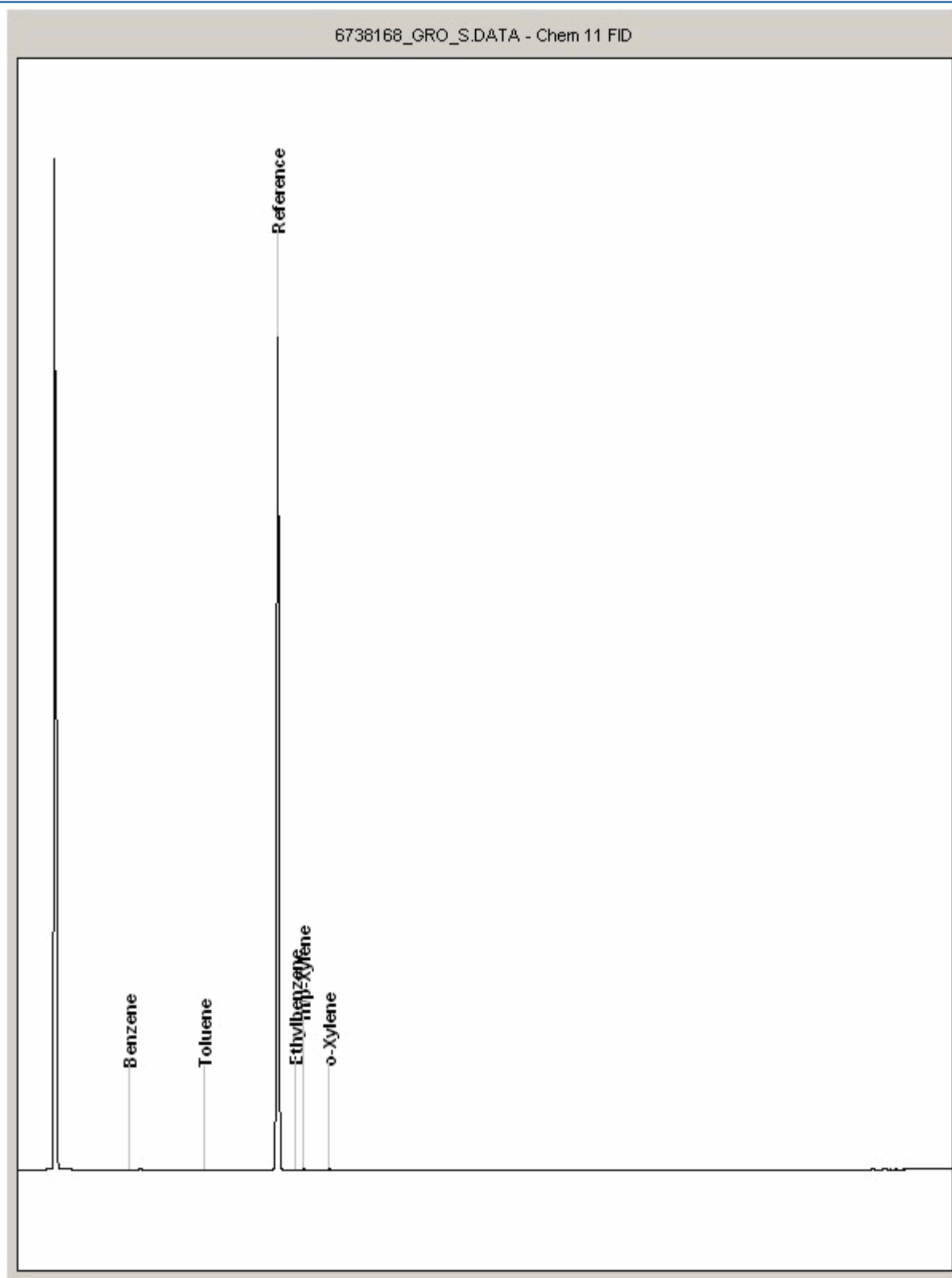
Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 6738168
Sample ID : BH109

Depth : 0.50





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

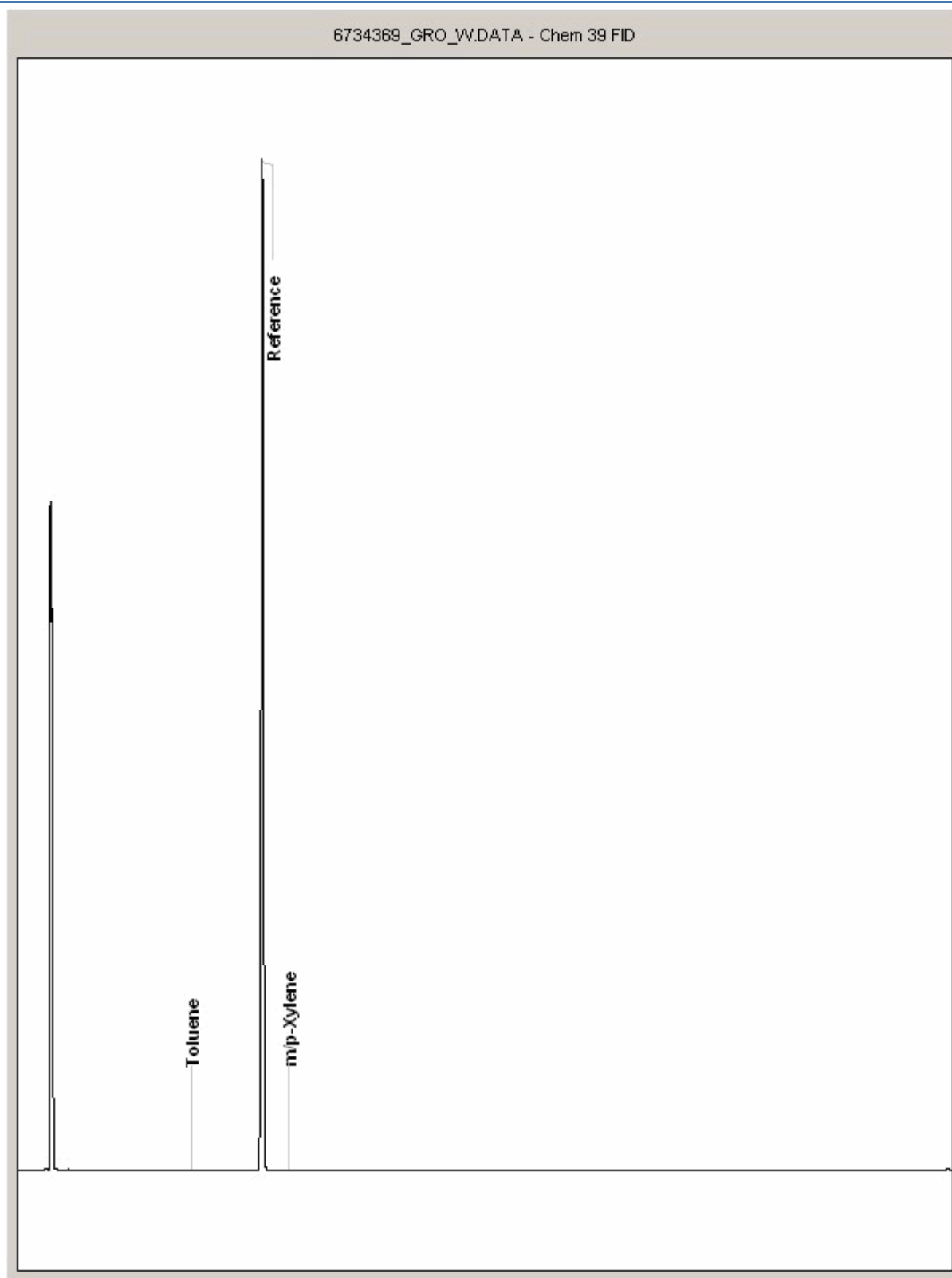
Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6734369
Sample ID : BH106

Depth : 1.00 - 6.00





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

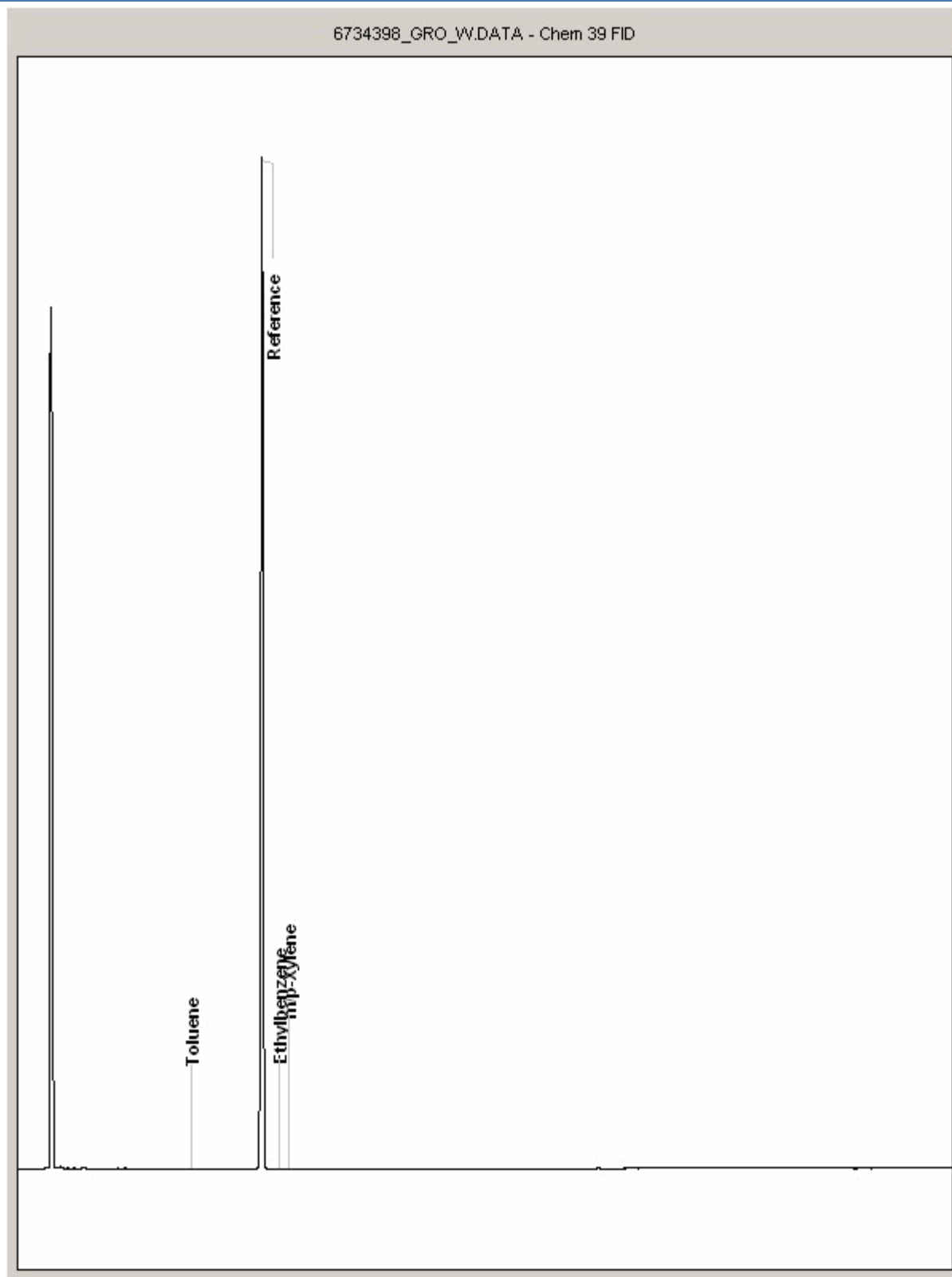
Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6734398
Sample ID : BH107

Depth : 2.50 - 2.90





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

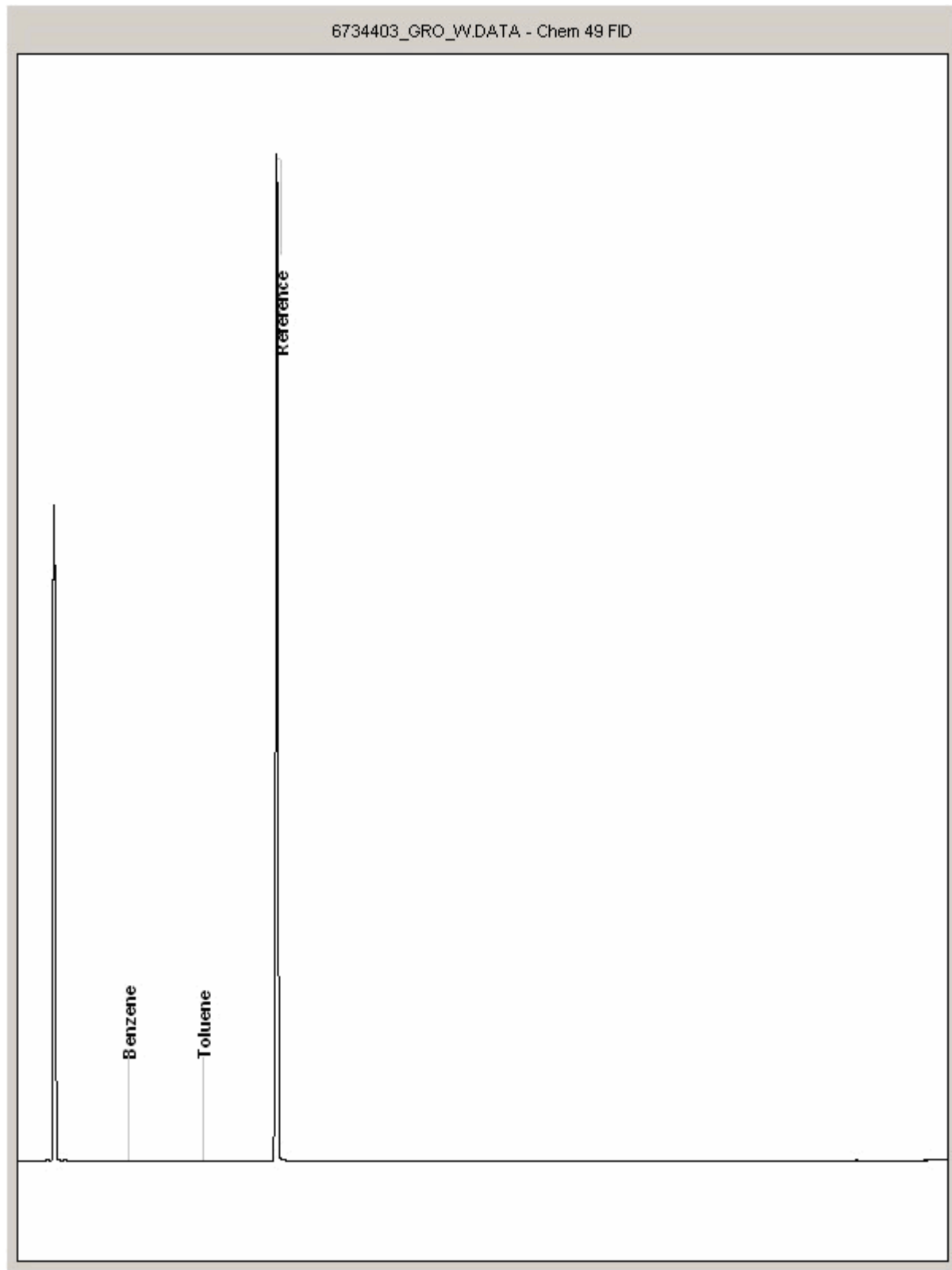
Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6734403
Sample ID : BH107

Depth : 3.80 - 8.00





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

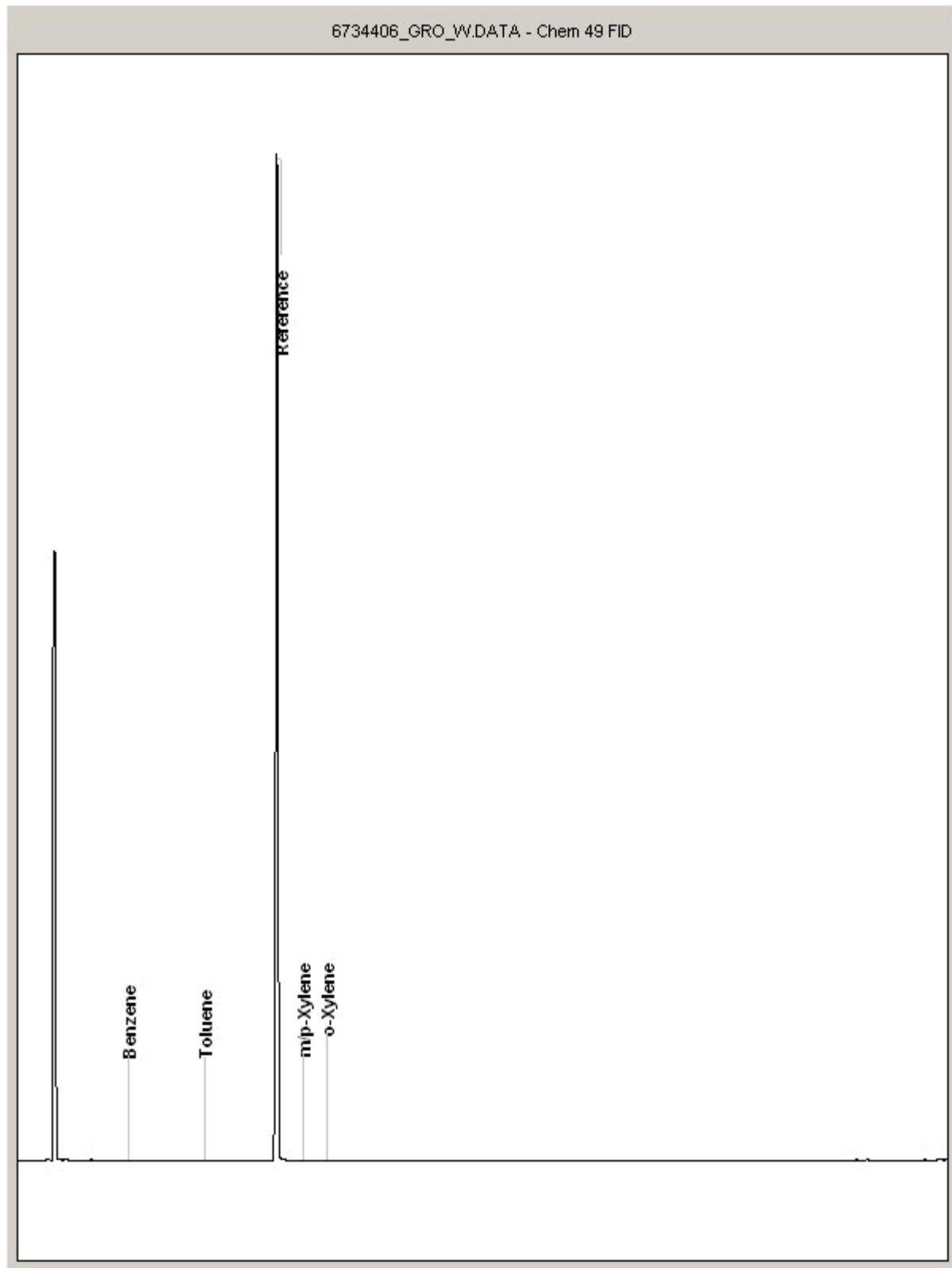
Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6734406
Sample ID : BH108

Depth : 1.10 - 6.00





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

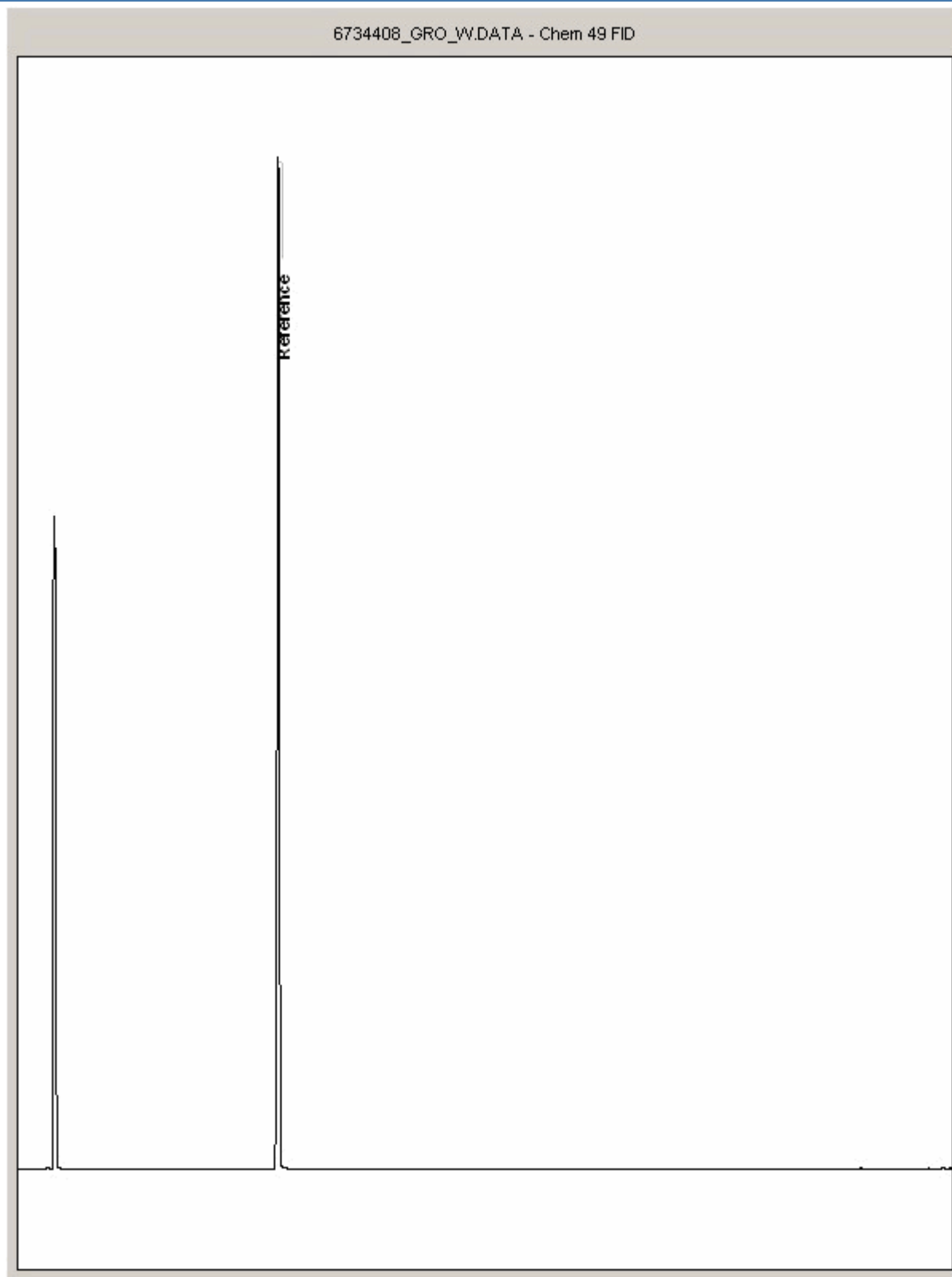
Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6734408
Sample ID : BH109

Depth : 2.10 - 6.00





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

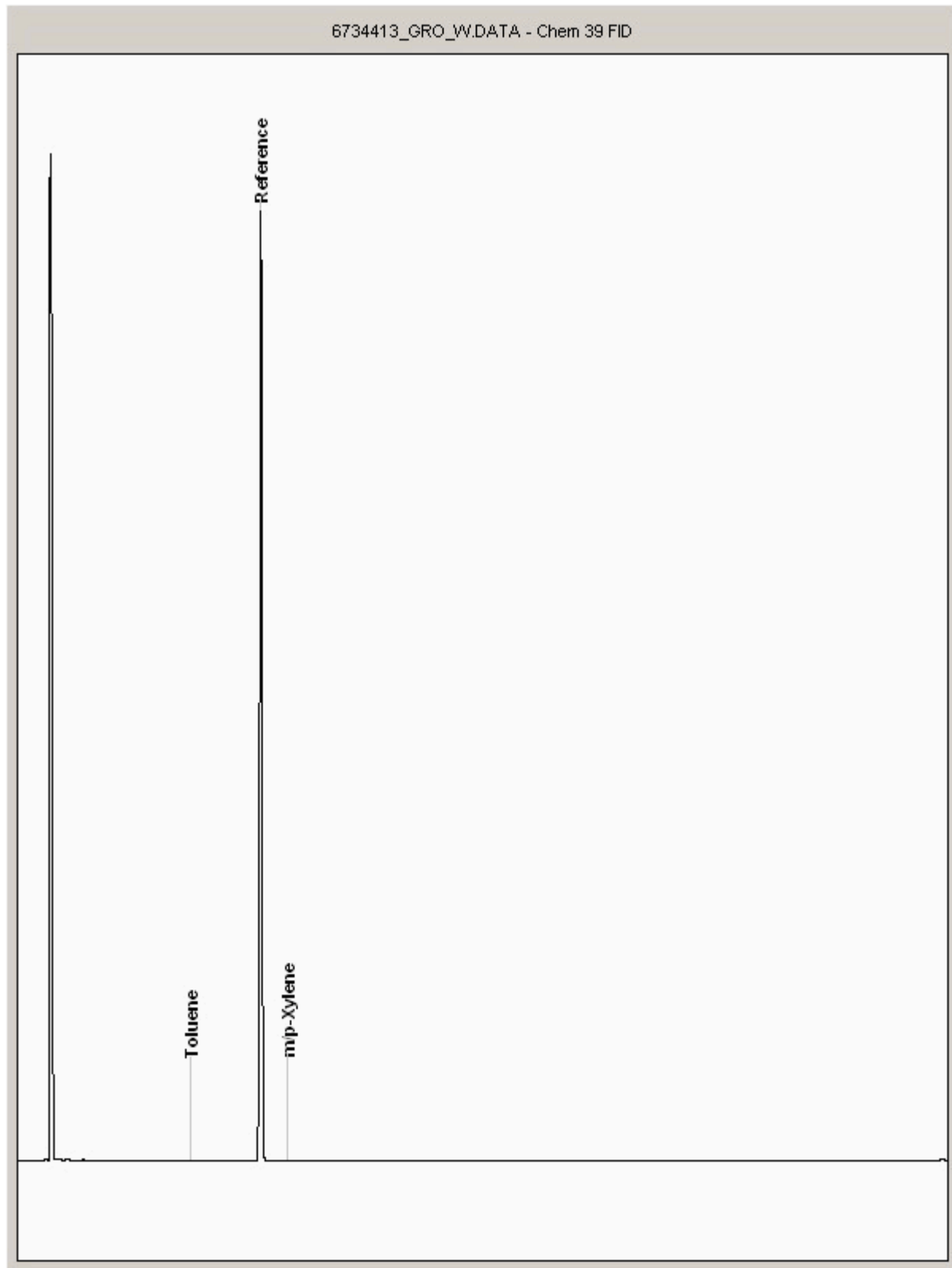
Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6734413
Sample ID : BH106

Depth : 6.00 - 7.00





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

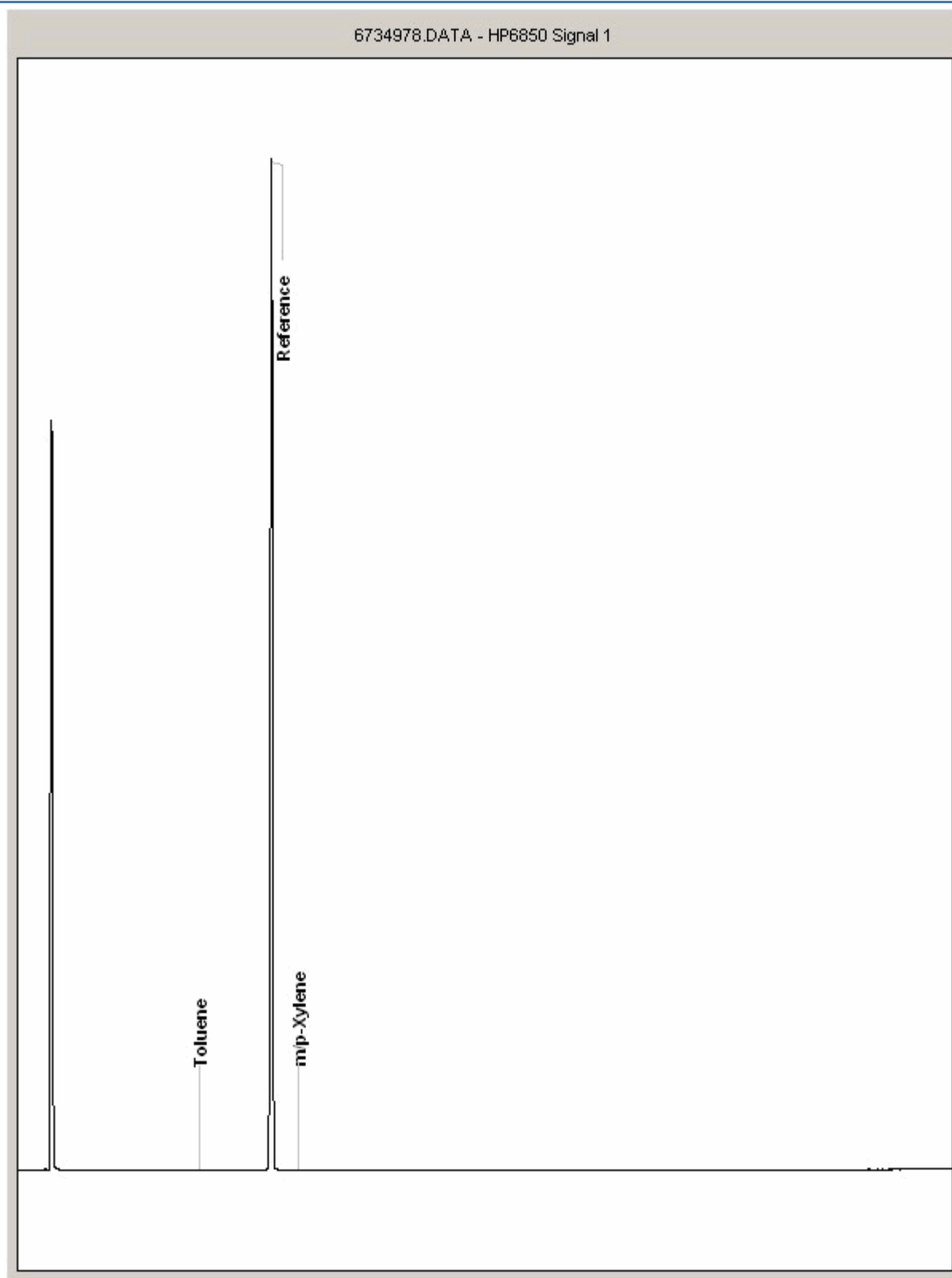
Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6734978
Sample ID : BH106

Depth : 1.00 - 6.00





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

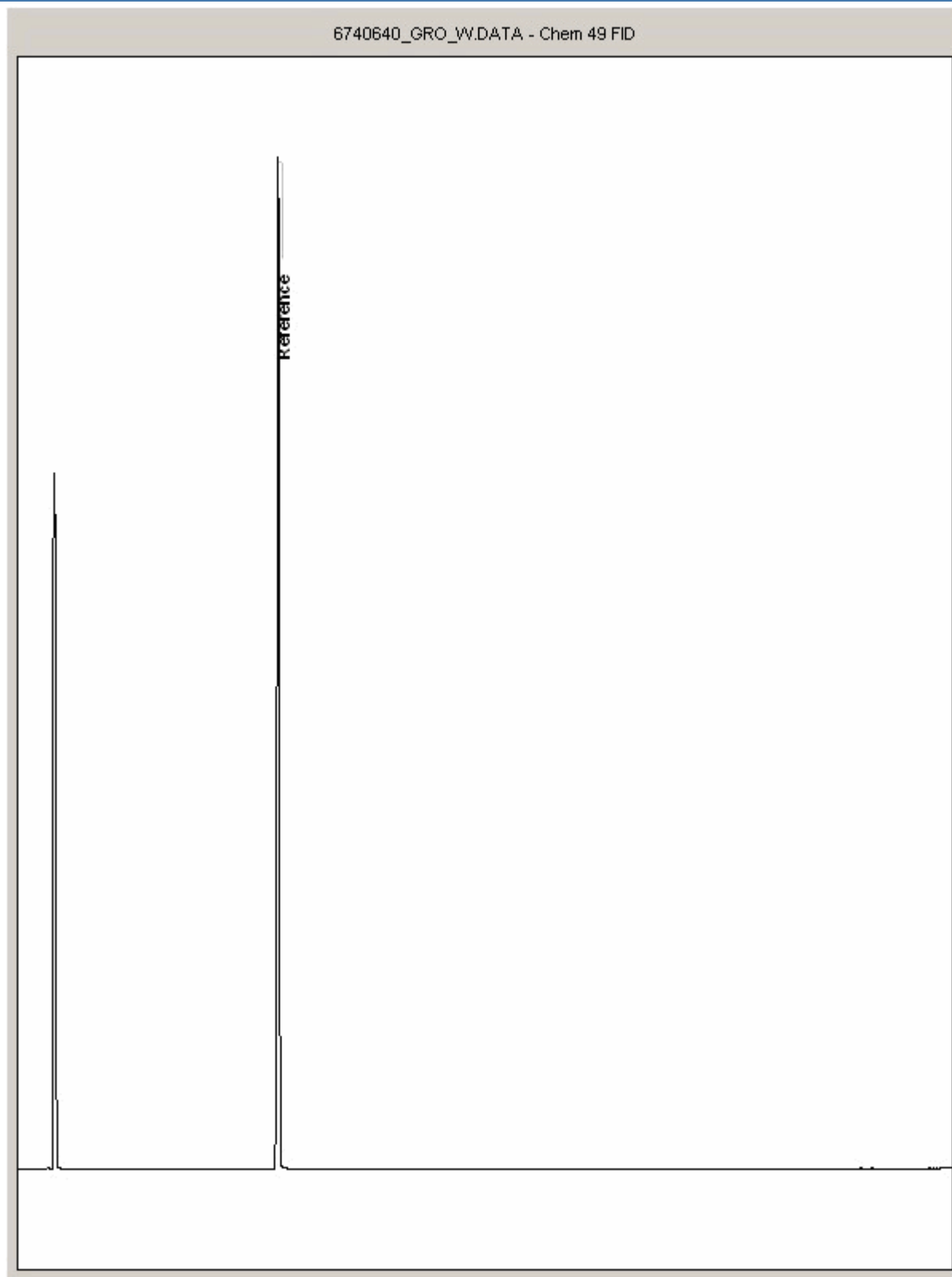
Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6740640
Sample ID : BH108

Depth : 1.10 - 6.00





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

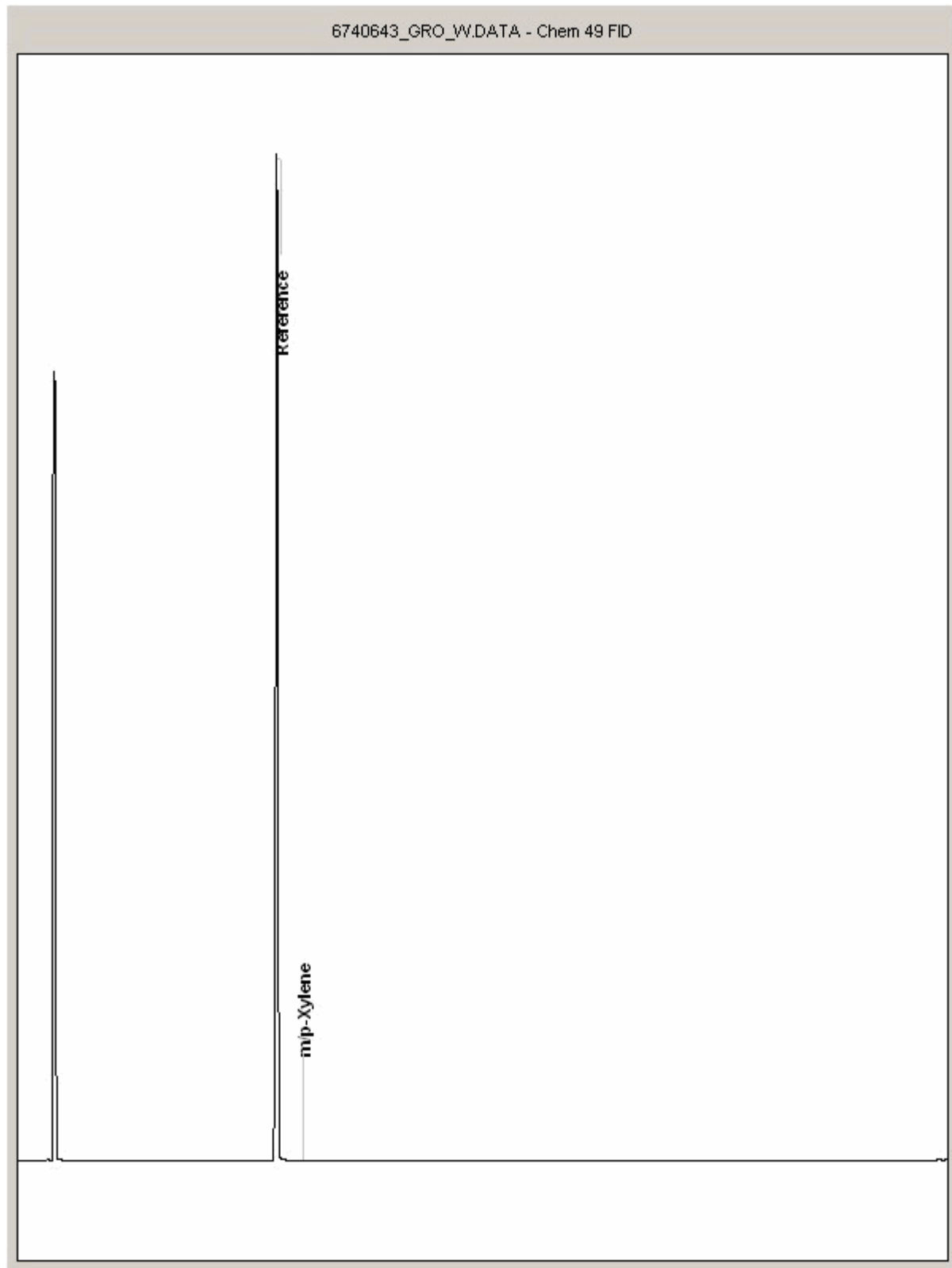
Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6740643
Sample ID : BH106

Depth : 6.00 - 7.00





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

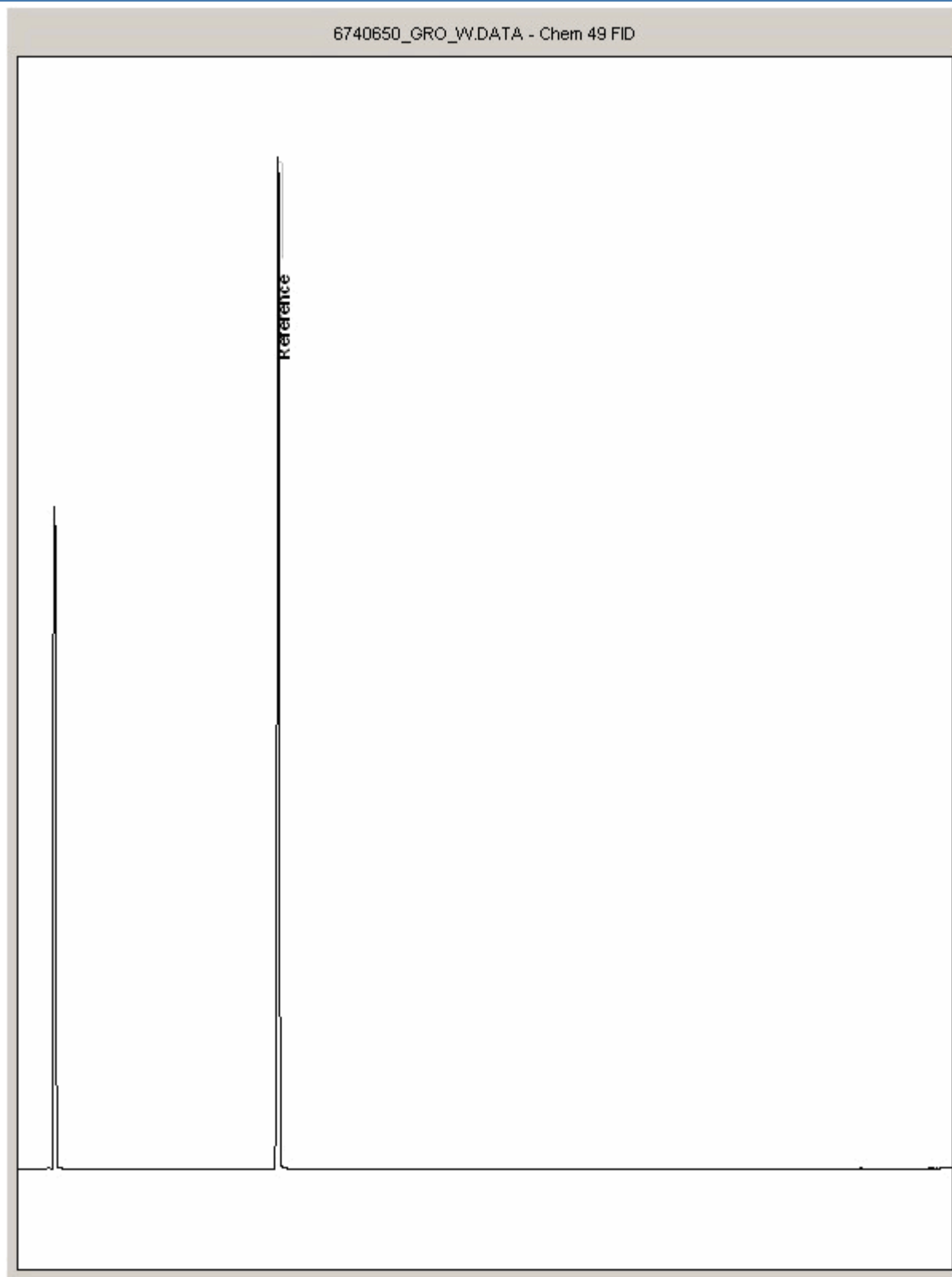
Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6740650
Sample ID : BH107

Depth : 3.80 - 8.00





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

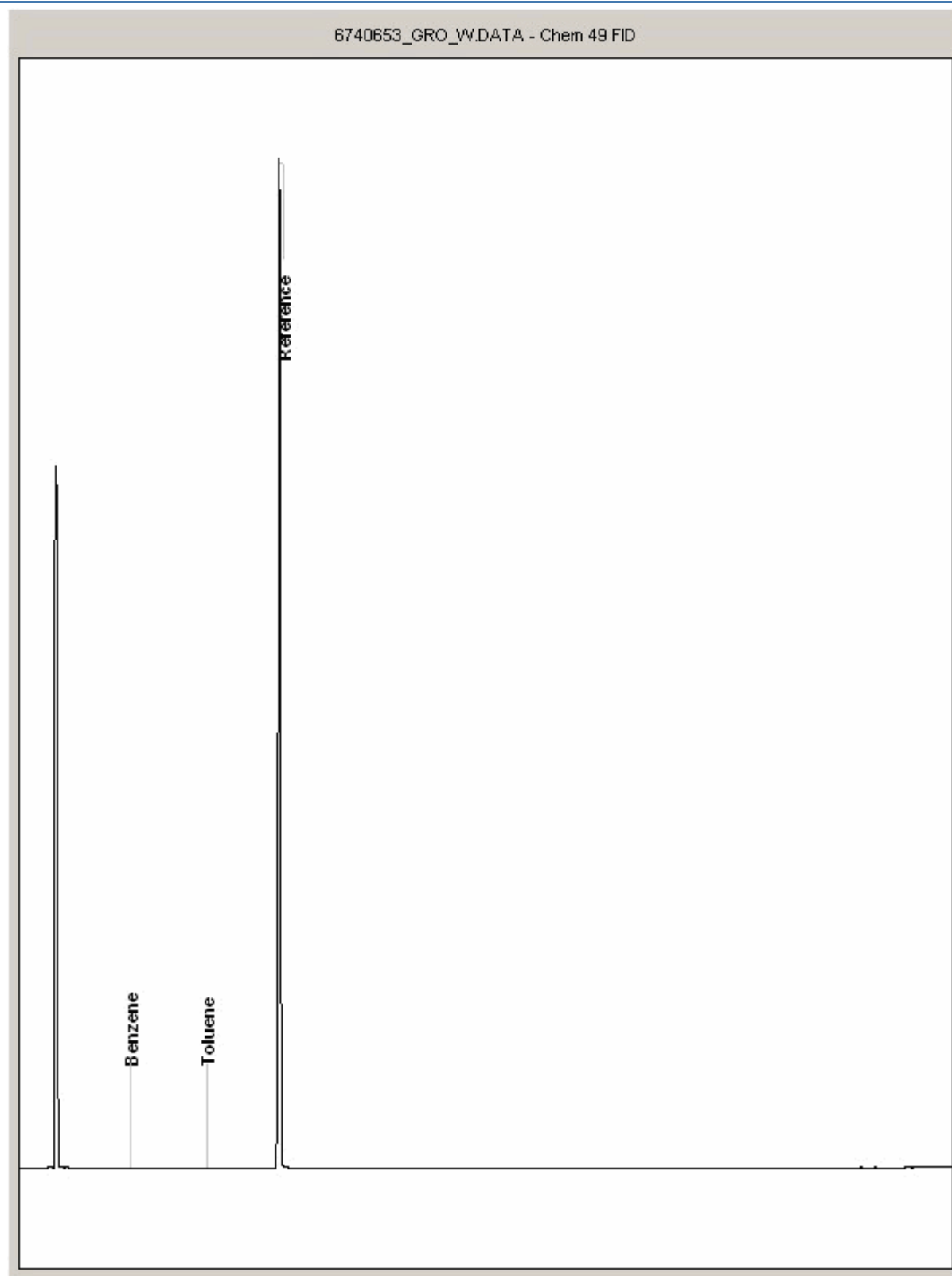
Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6740653
Sample ID : BH107

Depth : 2.50 - 2.90





SDG: 121220-104
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

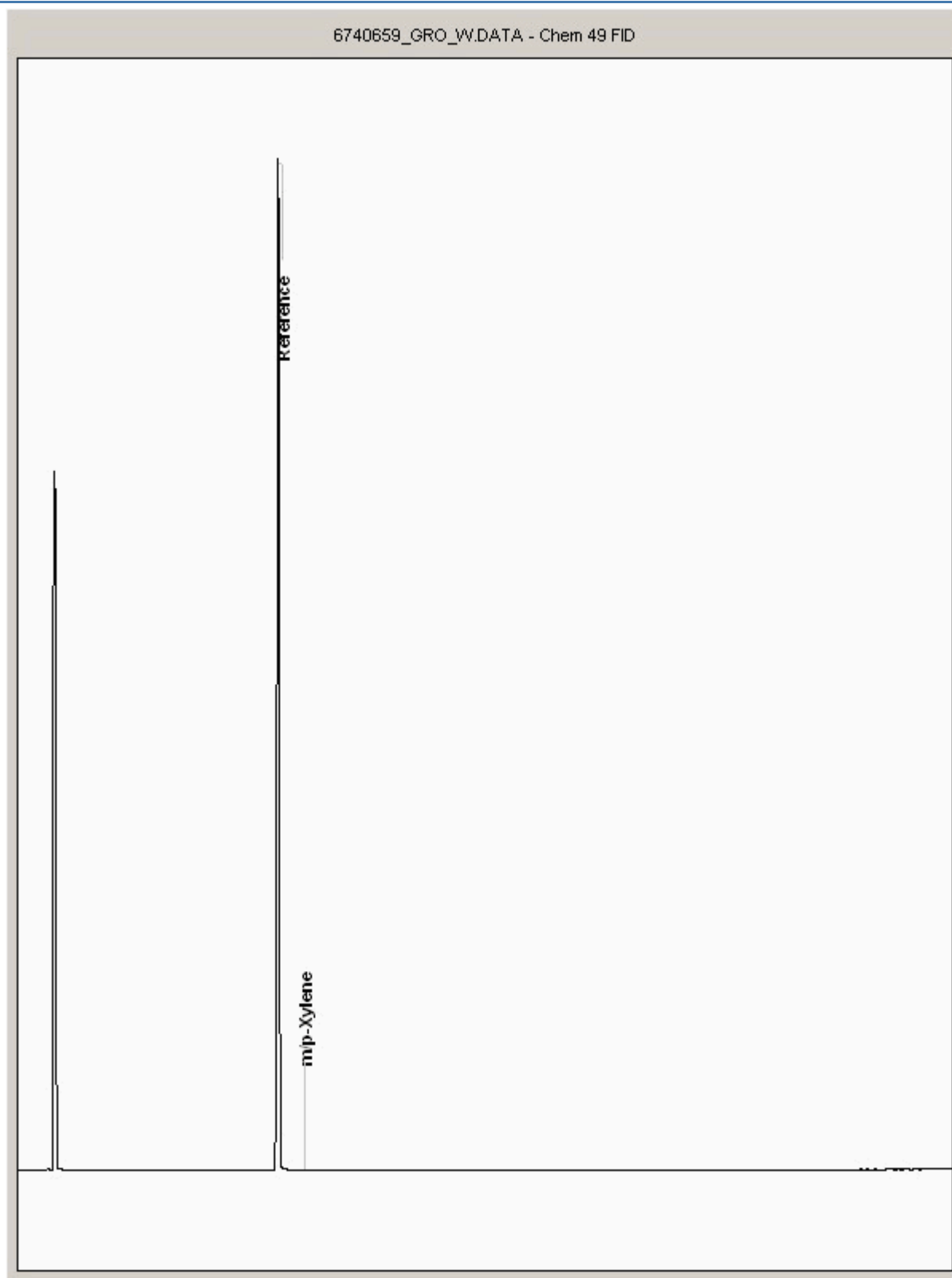
Order Number: R/PDEMEDINA.9
Report Number: 208101
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6740659
Sample ID : BH109

Depth : 2.10 - 6.00





CERTIFICATE OF ANALYSIS

SDG:	121220-104	Location:	Medina	Order Number:	R/PDEMEDINA.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208101
Client Reference:		Attention:	Antony Platt	Superseded Report:	

Appendix
General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.
2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.
4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.
7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.
8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
9. NDP -No determination possible due to insufficient/unsuitable sample.
10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.
11. Results relate only to the items tested.
12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.
13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.
14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).
16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).
17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.
22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill /made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
§	Sampled on date not provided
+	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than :
-
Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Mayer Brown Ltd
Lion House
Oriental Road
Woking
Surrey
GU22 8AR

Attention: Antony Platt

CERTIFICATE OF ANALYSIS

Date: 14 January 2013
Customer: H_MAYERBROW_WOK
Sample Delivery Group (SDG): 121221-72
Your Reference:
Location: Medina
Report No: 208352

This report has been revised and directly supersedes 208275 in its entirety.

We received 6 samples on Friday December 21, 2012 and 10 of these samples were scheduled for analysis which was completed on Monday January 14, 2013. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan

Operations Manager





SDG:	121221-72	Location:	Medina	Order Number:	R/PDEMedina.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208352
Client Reference:		Attention:	Antony Platt	Superseded Report:	208275

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
6707276	BH1			19/12/2012
6707279	BH2			19/12/2012
6707283	BH3			19/12/2012
6707287	BH4			19/12/2012
6707291	BH5			19/12/2012
6707294	BH104			19/12/2012

Only received samples which have had analysis scheduled will be shown on the following pages.



SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

LIQUID Results Legend <div> <div>X</div> Test </div> <div> <div>N</div> No Determination Possible </div>	Lab Sample No(s)		6707276	6707279	6707283	6707287	6707291	6707294
	Customer Sample Reference		BH1	BH2	BH3	BH4	BH5	BH104
	AGS Reference							
	Depth (m)							
	Container		1l green glass bottle	1l plastic (AL E221)	1l plastic (AL E221)	1l green glass bottle	1l plastic (AL E221)	Vial (AL E297)
Alkalinity as CaCO ₃	All	NDPs: 0 Tests: 6	X	X	X	X	X	X
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 6	X	X	X	X	X	X
Anions by Kone (w)	All	NDPs: 0 Tests: 6	X	X	X	X	X	X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 6	X	X	X	X	X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 6	X	X	X	X	X	X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 6	X	X	X	X	X	X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 6	X	X	X	X	X	X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 6		X	X	X	X	X
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 6	X	X	X	X	X	X
Mercury Unfiltered	All	NDPs: 0 Tests: 6	X	X	X	X	X	X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 6	X	X	X	X	X	X
pH Value	All	NDPs: 0 Tests: 6	X	X	X	X	X	X
TPH CWG (W)	All	NDPs: 0 Tests: 6	X	X	X	X	X	X



CERTIFICATE OF ANALYSIS

SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Results Legend			Customer Sample Ref.		BH1	BH2	BH3	BH4	BH5	BH104
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.				19/12/2012	19/12/2012	19/12/2012	19/12/2012	19/12/2012	19/12/2012
aq	Aqueous / settled sample.									
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted test.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				21/12/2012	21/12/2012	21/12/2012	21/12/2012	21/12/2012	21/12/2012
(F)	Trigger breach confirmed				121221-72	121221-72	121221-72	121221-72	121221-72	121221-72
1-48*\$@	Sample deviation (see appendix)				6707276	6707279	6707283	6707287	6707291	6707294
Component	LOD/Units	Method								
Alkalinity, Total as CaCO3	<2 mg/l	TM043			4840	1650	1270	4410	2140	14500
					#	#	#	#	#	#
Ammoniacal Nitrogen as NH3	<0.2 mg/l	TM099			4.68	23.4	42.6	0.597	0.657	7.25
					#	#	#	#	#	#
Ammoniacal Nitrogen as NH4	<0.3 mg/l	TM099			4.95	24.8	45.1	0.633	0.696	7.68
					#	#	#	#	#	#
Antimony (diss.filt)	<0.16 µg/l	TM152			0.761	2.35	5.98	0.969	2.6	1.18
					#	#	#	#	#	#
Arsenic (diss.filt)	<0.12 µg/l	TM152			8.07	<0.12	<0.12	1.42	4.15	7.36
					#	#	#	#	#	#
Barium (diss.filt)	<0.03 µg/l	TM152			157	643	598	28.8	120	50.3
					#	#	#	#	#	#
Beryllium (diss.filt)	<0.07 µg/l	TM152			<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
					#	#	#	#	#	#
Boron (diss.filt)	<9.4 µg/l	TM152			1770	997	2140	338	179	152
					#	#	#	#	#	#
Cadmium (diss.filt)	<0.1 µg/l	TM152			<0.1	0.281	0.194	<0.1	<0.1	<0.1
					#	#	#	#	#	#
Chromium (diss.filt)	<0.22 µg/l	TM152			11.7	19.9	19.4	5	6.03	5.46
					#	#	#	#	#	#
Copper (diss.filt)	<0.85 µg/l	TM152			1.38	7.47	4.32	2.16	1.23	3.17
					#	#	#	#	#	#
Lead (diss.filt)	<0.02 µg/l	TM152			0.697	2.44	2.55	0.707	0.238	4.73
					#	#	#	#	#	#
Molybdenum (diss.filt)	<0.24 µg/l	TM152			5.65	19.2	20.5	2.21	2.68	11.7
					#	#	#	#	#	#
Nickel (diss.filt)	<0.15 µg/l	TM152			7.51	16.8	13.6	11.3	7.25	18.8
					#	#	#	#	#	#
Selenium (diss.filt)	<0.39 µg/l	TM152			16	<0.39	<0.39	1.41	0.894	4.87
					#	#	#	#	#	#
Zinc (diss.filt)	<0.41 µg/l	TM152			7.58	26.8	38.4	17.8	10.6	8.52
					#	#	#	#	#	#
Mercury (tot.unfilt)	<0.02 µg/l	TM183			0.592	<0.02	1.77	0.393	0.943	1.11
Sulphate	<2 mg/l	TM184			171	372	610	879	122	834
					#	#	#	#	#	#
Chloride	<2 mg/l	TM184			454	12000	7630	184	40.3	256
					#	#	#	#	#	#
Nitrate as N	<0.0677 mg/l	TM184			0.184	<0.0677	<0.0677	0.245	<0.0677	0.114
					@ #	@ #	@ #	@ #	@ #	@ #
Cyanide, Total	<0.05 mg/l	TM227			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
					@ #	@ #	@ #	@ #	@ #	@ #
Phenol (low level)	<0.5 µg/l	TM255			<0.5	0.64	<0.5	<0.5	<0.5	<0.5
Cresols (low level)	<0.5 µg/l	TM255			<0.5	<0.5	<0.5	<0.5	<0.5	0.93
Xylenols (low level)	<0.5 µg/l	TM255			<0.5	<0.5	0.97	<0.5	<0.5	<0.5
1-Napthol (low level)	<0.5 µg/l	TM255			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,3,5-Trimethylphenol (low level)	<0.5 µg/l	TM255			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of detected 5 Speciated Phenols by HPLC (W)	<0.64 µg/l	TM255			<0.64	0.64	0.97	<0.64	<0.64	1.59
pH	<1 pH Units	TM256			7.46	7.02	7.42	7.39	7.21	6.96
					@ #	@ #	@ #	@ #	@ #	@ #



CERTIFICATE OF ANALYSIS

SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

TPH CWG (W)

Results Legend		Customer Sample Ref.						
#	ISO17025 accredited.		BH1	BH2	BH3	BH4	BH5	BH104
M	mCERTS accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
aq	Aqueous / settled sample.		19/12/2012	19/12/2012	19/12/2012	19/12/2012	19/12/2012	19/12/2012
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		21/12/2012	21/12/2012	21/12/2012	21/12/2012	21/12/2012	21/12/2012
(F)	Trigger breach confirmed		121221-72	121221-72	121221-72	121221-72	121221-72	121221-72
1-48*\$@	Sample deviation (see appendix)		6707276	6707279	6707283	6707287	6707291	6707294
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM245	101	98	102	104	103	106
GRO >C5-C12	<50 µg/l	TM245	58	<50	<50	<50	<50	<50
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3	<3	<3	<3	<3	<3
Benzene	<7 µg/l	TM245	<7	<7	<7	<7	<7	<7
Toluene	<4 µg/l	TM245	<4	<4	<4	<4	<4	<4
Ethylbenzene	<5 µg/l	TM245	<5	<5	<5	<5	<5	<5
m,p-Xylene	<8 µg/l	TM245	<8	<8	<8	<8	<8	<8
o-Xylene	<3 µg/l	TM245	<3	<3	<3	<3	<3	<3
Sum of detected Xylenes	<11 µg/l	TM245	<11	<11	<11	<11	<11	<11
Sum of detected BTEX	<28 µg/l	TM245	<28	<28	<28	<28	<28	<28
Aliphatics >C5-C6	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<10 µg/l	TM245	11	<10	<10	<10	<10	<10
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	29	73	28	<10	28	23
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	159	268	102	<10	108	244
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	1970	2760	596	295	1470	2280
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	2160	3100	726	295	1600	2550
Aromatics >EC5-EC7	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/l	TM245	14	<10	<10	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	30	44	50	<10	21	14
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	100	512	307	1280	130	87
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	576	2480	967	17200	871	555
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	706	3040	1320	18500	1020	656
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	2930	6150	2060	18800	2640	3210



SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



SDG:	121221-72	Location:	Medina	Order Number:	R/PDEMedina.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208352
Client Reference:		Attention:	Antony Platt	Superseded Report:	208275

Test Completion Dates

Lab Sample No(s)	6707276	6707279	6707283	6707287	6707291	6707294
Customer Sample Ref.	BH1	BH2	BH3	BH4	BH5	BH104
AGS Ref.						
Depth						
Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Alkalinity as CaCO3	07-Jan-2013	07-Jan-2013	04-Jan-2013	07-Jan-2013	04-Jan-2013	07-Jan-2013
Ammoniacal Nitrogen	09-Jan-2013	09-Jan-2013	09-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013
Anions by Kone (w)	11-Jan-2013	11-Jan-2013	11-Jan-2013	11-Jan-2013	11-Jan-2013	11-Jan-2013
Cyanide Comp/Free/Total/Thiocyanate	02-Jan-2013	02-Jan-2013	02-Jan-2013	02-Jan-2013	02-Jan-2013	02-Jan-2013
Dissolved Metals by ICP-MS	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013
EPH CWG (Aliphatic) Aqueous GC (W)	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013
EPH CWG (Aromatic) Aqueous GC (W)	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013
GRO by GC-FID (W)	05-Jan-2013	05-Jan-2013	05-Jan-2013	05-Jan-2013	05-Jan-2013	05-Jan-2013
Low Level Phenols by HPLC (W)	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013
Mercury Unfiltered	07-Jan-2013	07-Jan-2013	07-Jan-2013	07-Jan-2013	07-Jan-2013	07-Jan-2013
Nitrite by Kone (w)	11-Jan-2013	11-Jan-2013	11-Jan-2013	11-Jan-2013	11-Jan-2013	11-Jan-2013
PAH Spec MS - Aqueous (W)	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013
pH Value	07-Jan-2013	07-Jan-2013	07-Jan-2013	07-Jan-2013	07-Jan-2013	07-Jan-2013
TPH CWG (W)	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013	10-Jan-2013



SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

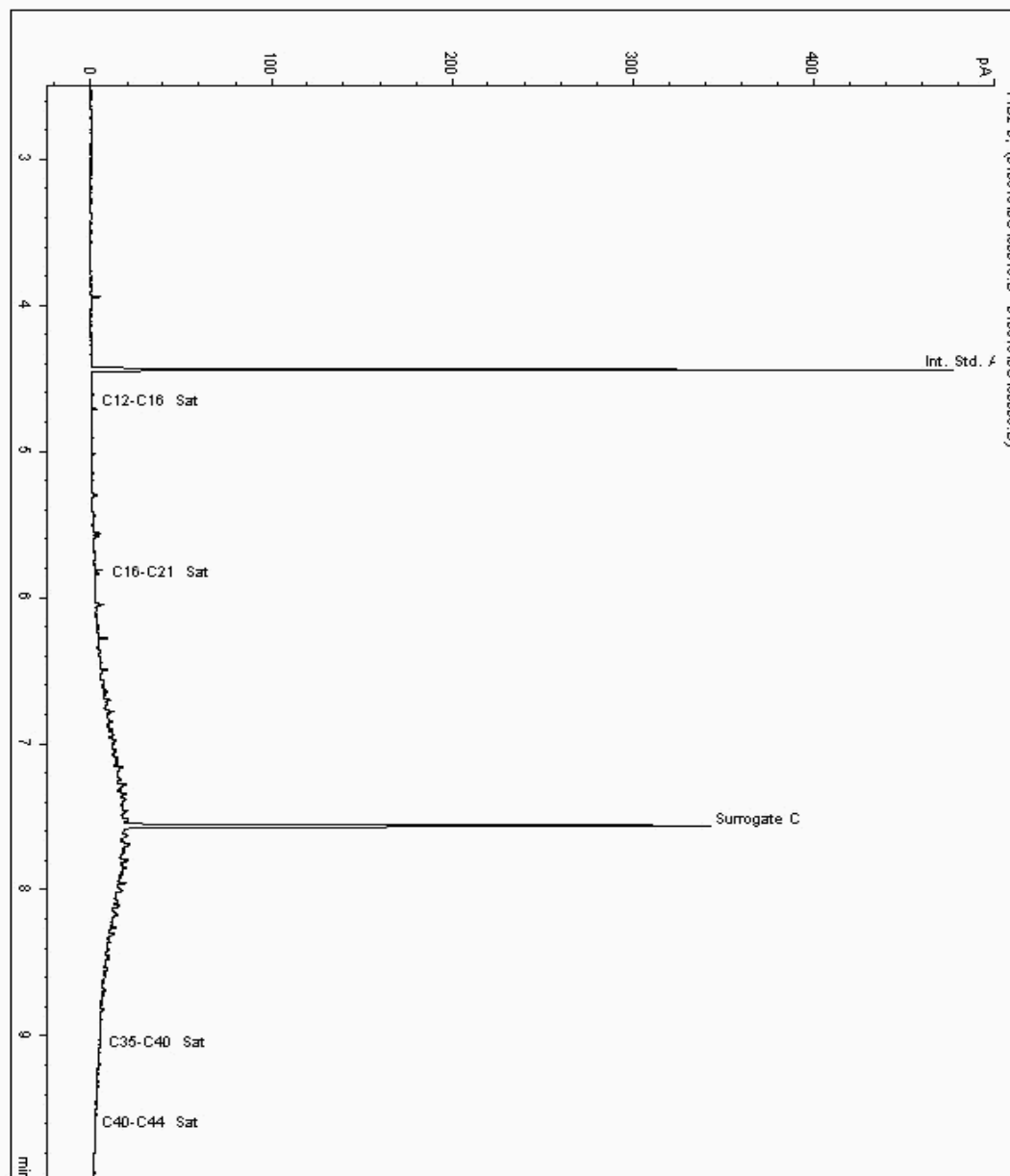
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6720217
Sample ID : BH104

Depth :

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6478560-6720217
Date Acquired : 09/01/2013 20:22:08 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

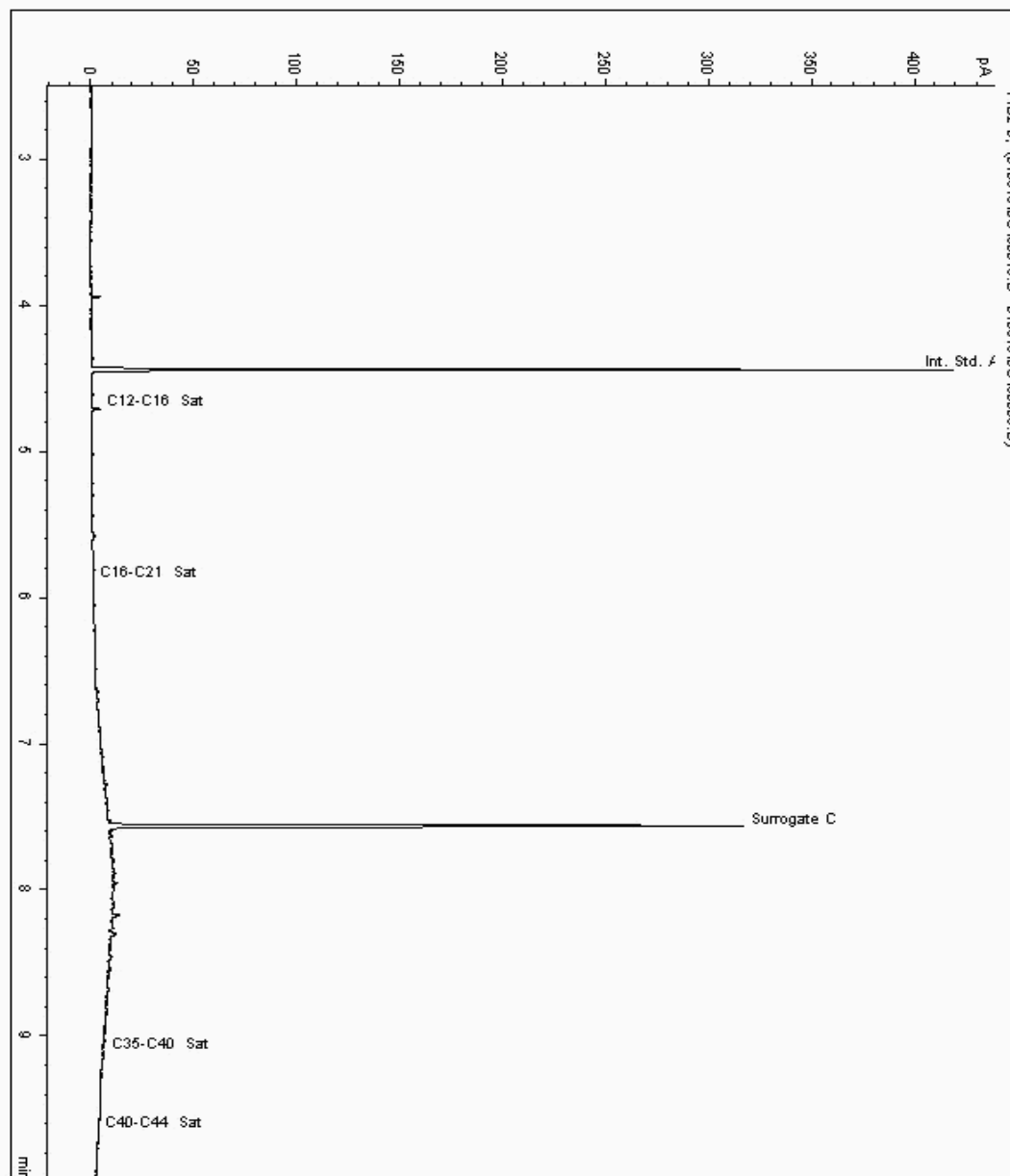
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6720315
Sample ID : BH5

Depth :

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6478545-6720315
Date Acquired : 09/01/2013 21:38:27 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

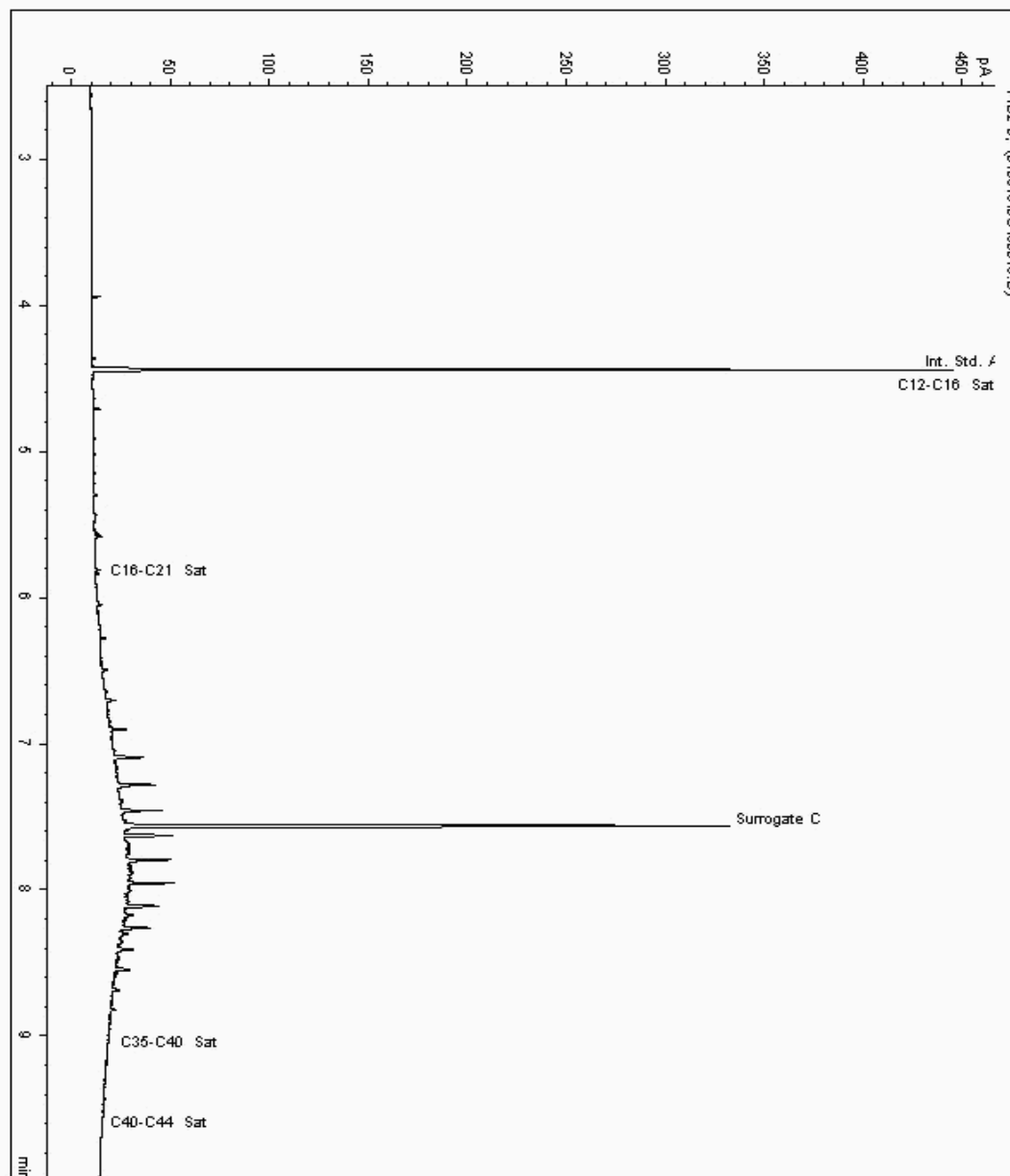
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6721624
Sample ID : BH2

Depth :

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6478476-6721624
Date Acquired : 09/01/2013 21:09:50 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

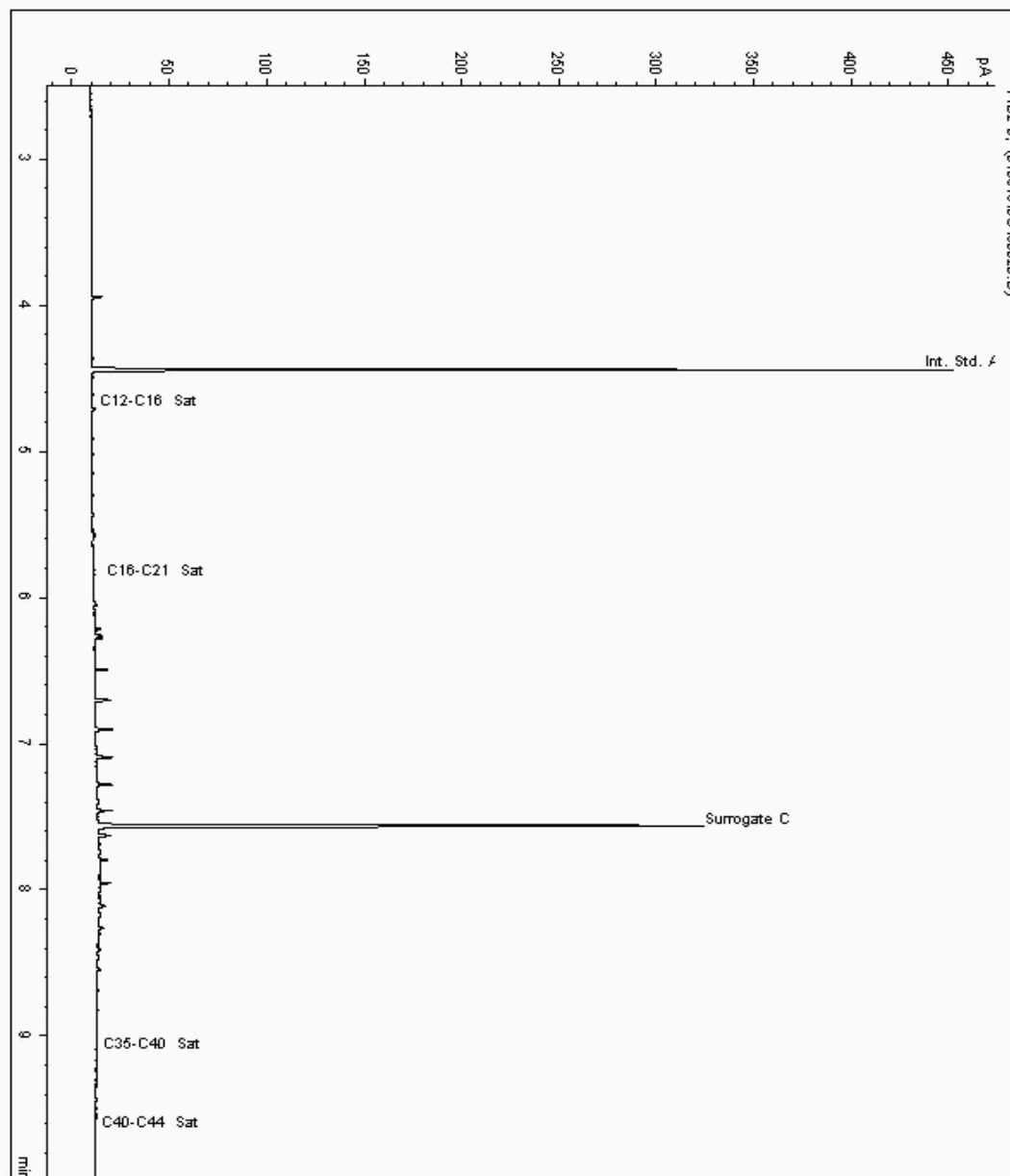
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6721653
Sample ID : BH3

Depth :

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6478502-6721653
Date Acquired : 09/01/2013 22:07:11 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

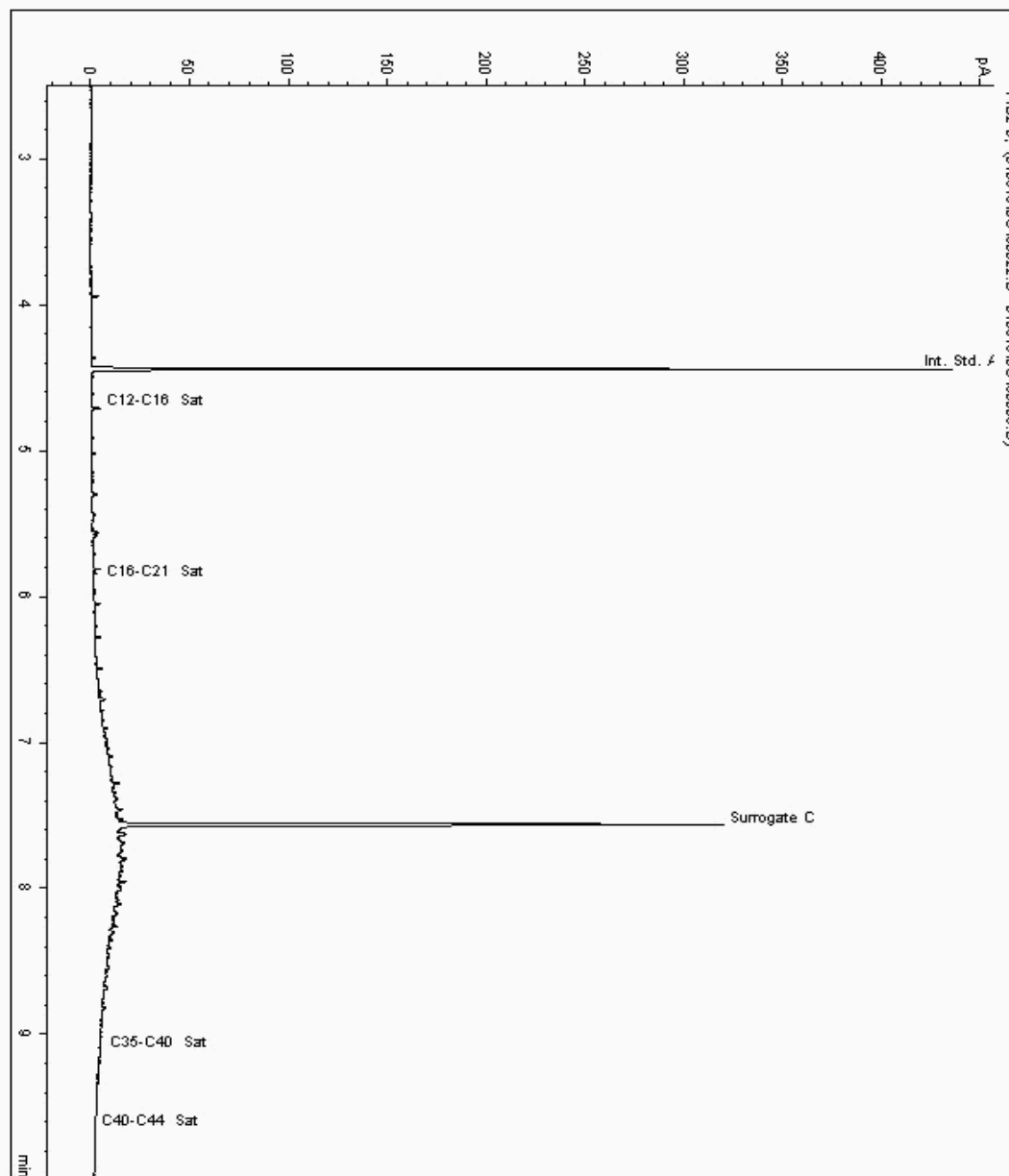
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6721683
Sample ID : BH1

Depth :

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6478438-6721683
Date Acquired : 09/01/2013 22:36:07 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

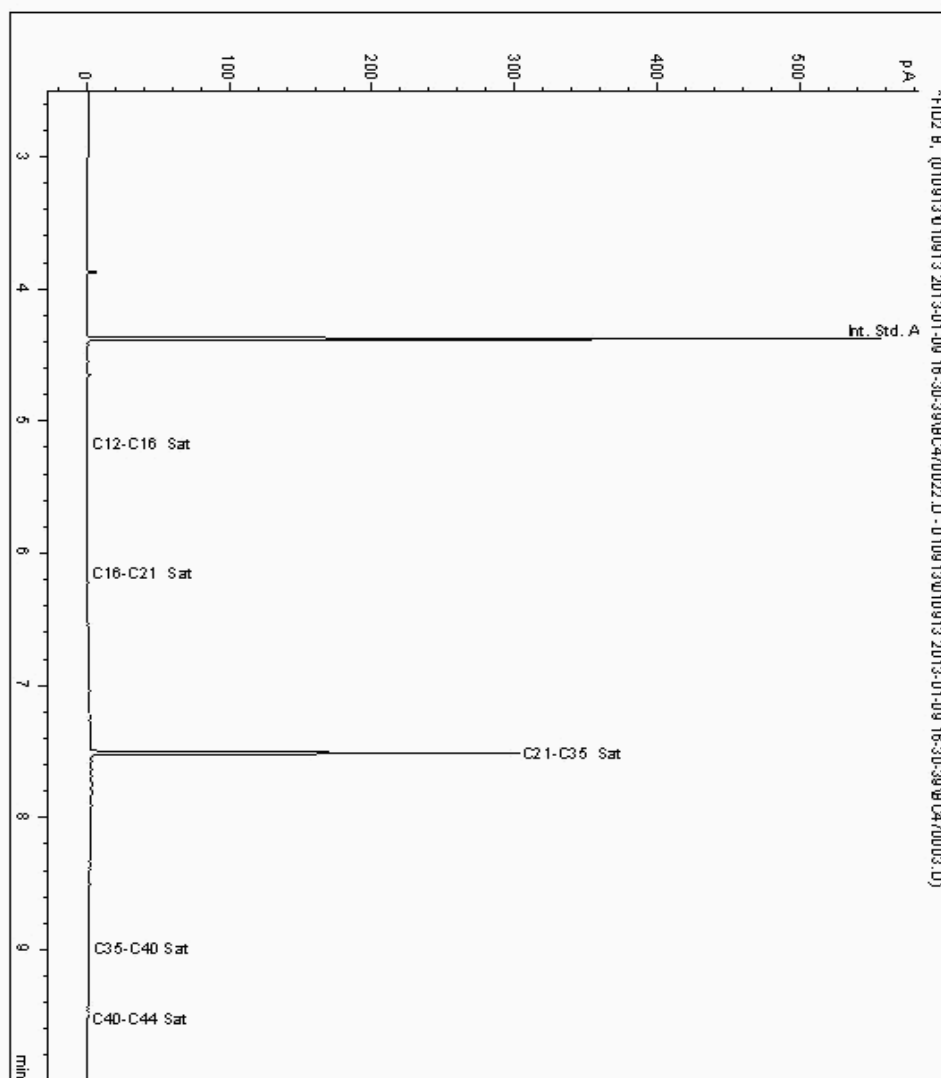
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 6721844
Sample ID : BH4

Depth :

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 6478526-6721844
Date Acquired : 09/01/13 22:53:00
Units :
Dilution :
CF : 1
Multiplier : 1.000





SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

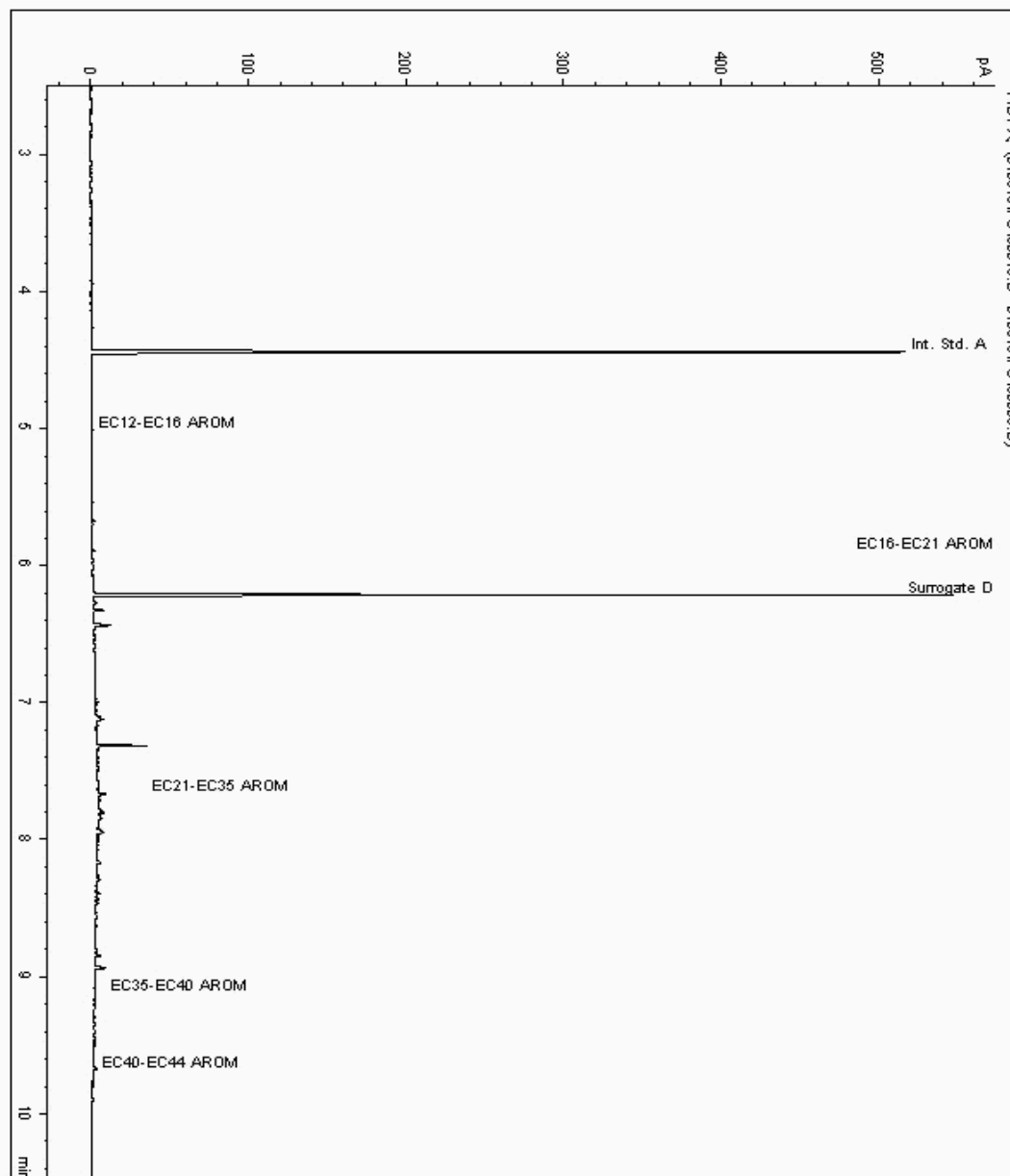
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6720217
Sample ID : BH104

Depth :

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6478561-6720217
Date Acquired : 09/01/2013 20:22:08 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

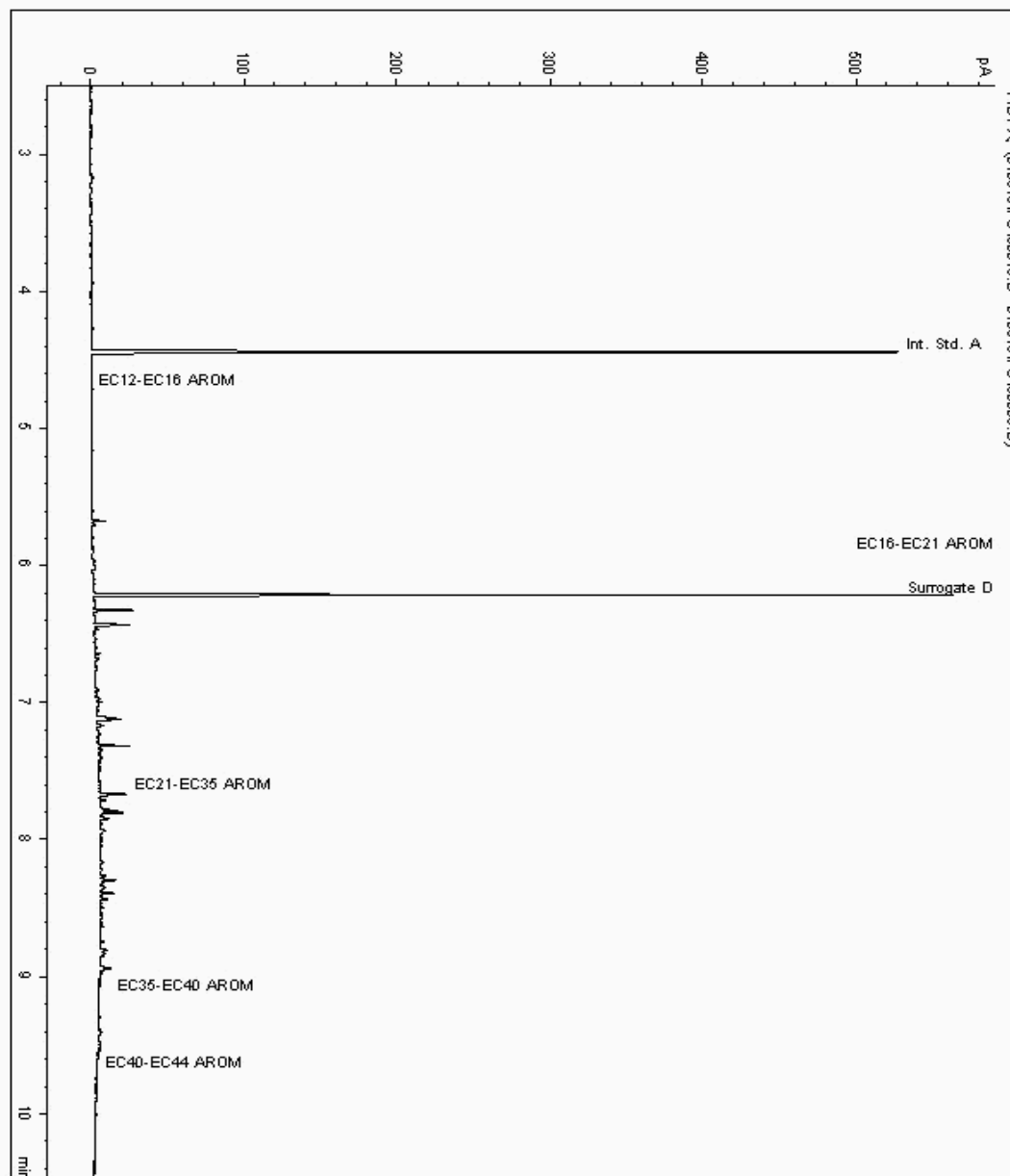
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6720315
Sample ID : BH5

Depth :

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6478546-6720315
Date Acquired : 09/01/2013 21:38:27 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

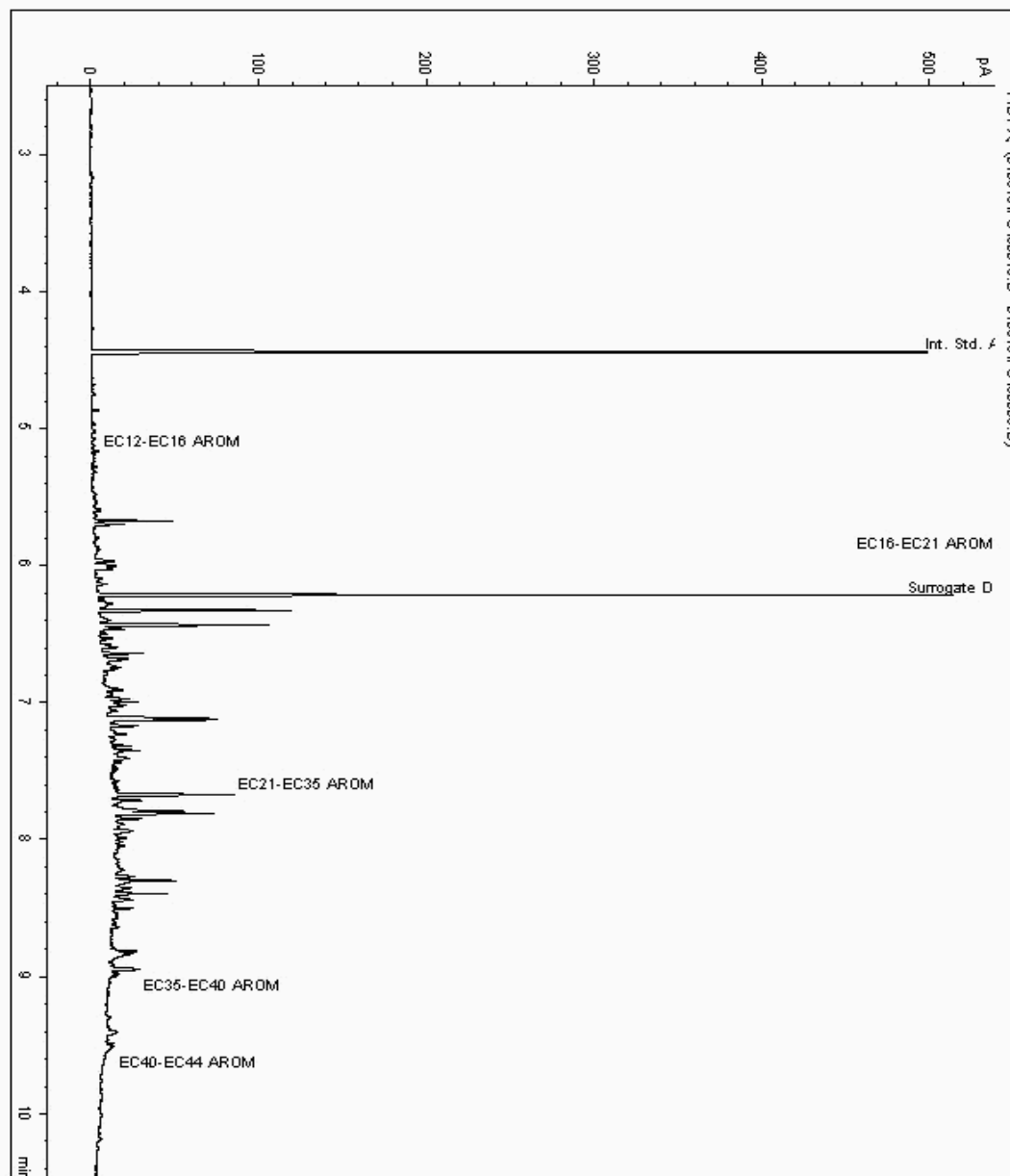
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6721624
Sample ID : BH2

Depth :

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6478477-6721624
Date Acquired : 09/01/2013 21:09:50 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

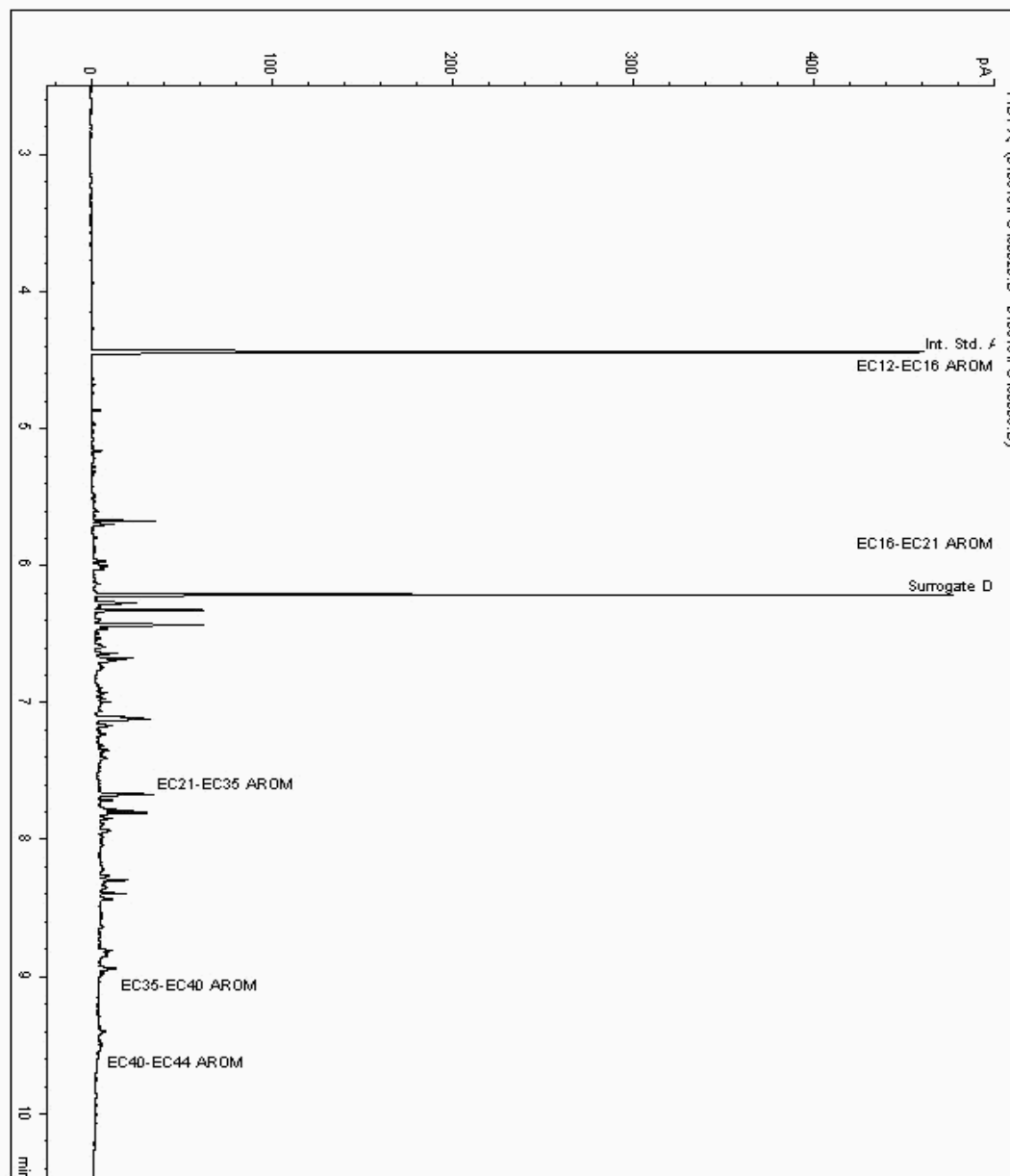
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6721653
Sample ID : BH3

Depth :

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6478503-6721653
Date Acquired : 09/01/2013 22:07:12 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

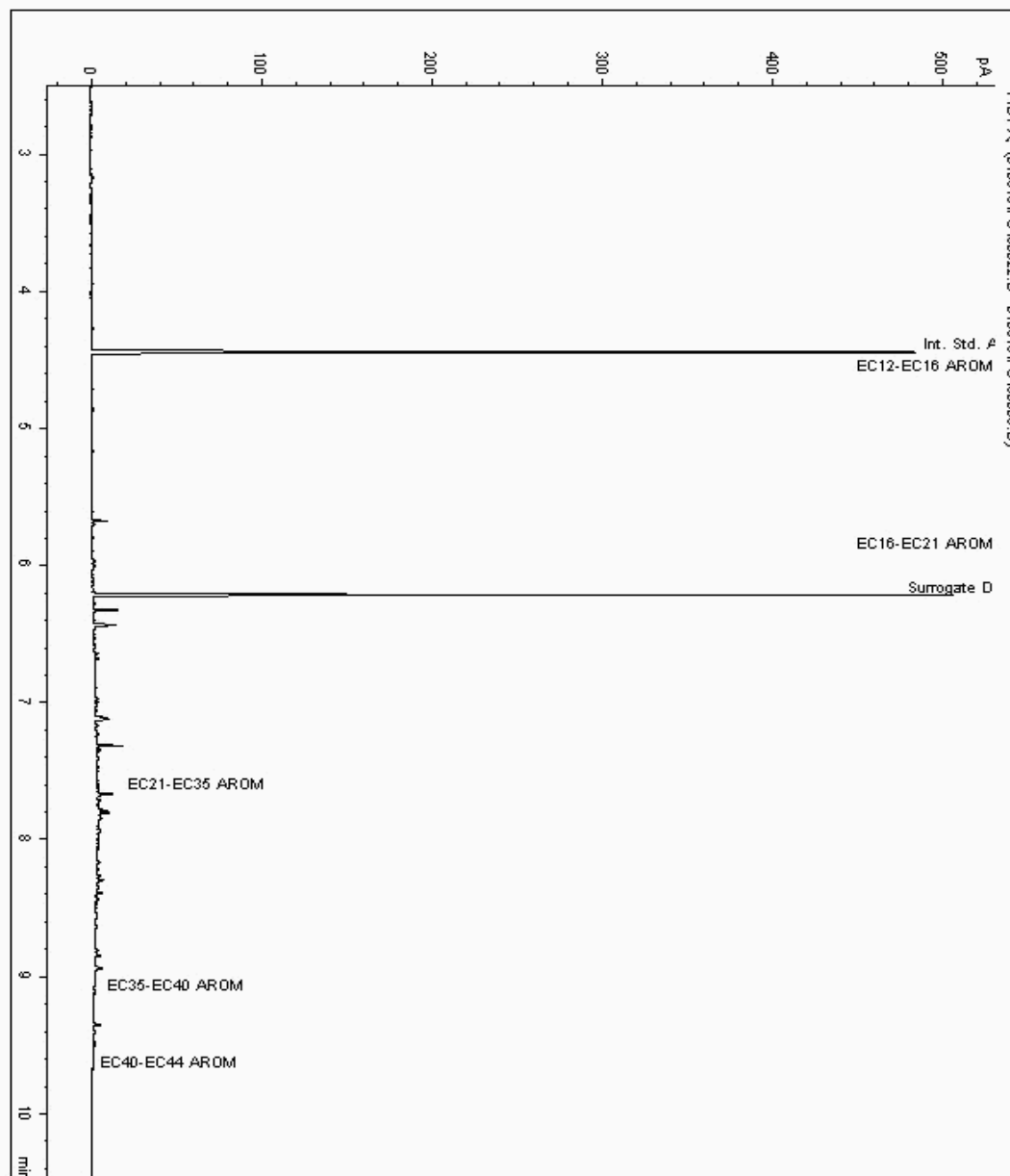
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6721683
Sample ID : BH1

Depth :

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6478439-6721683
Date Acquired : 09/01/2013 22:36:08 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

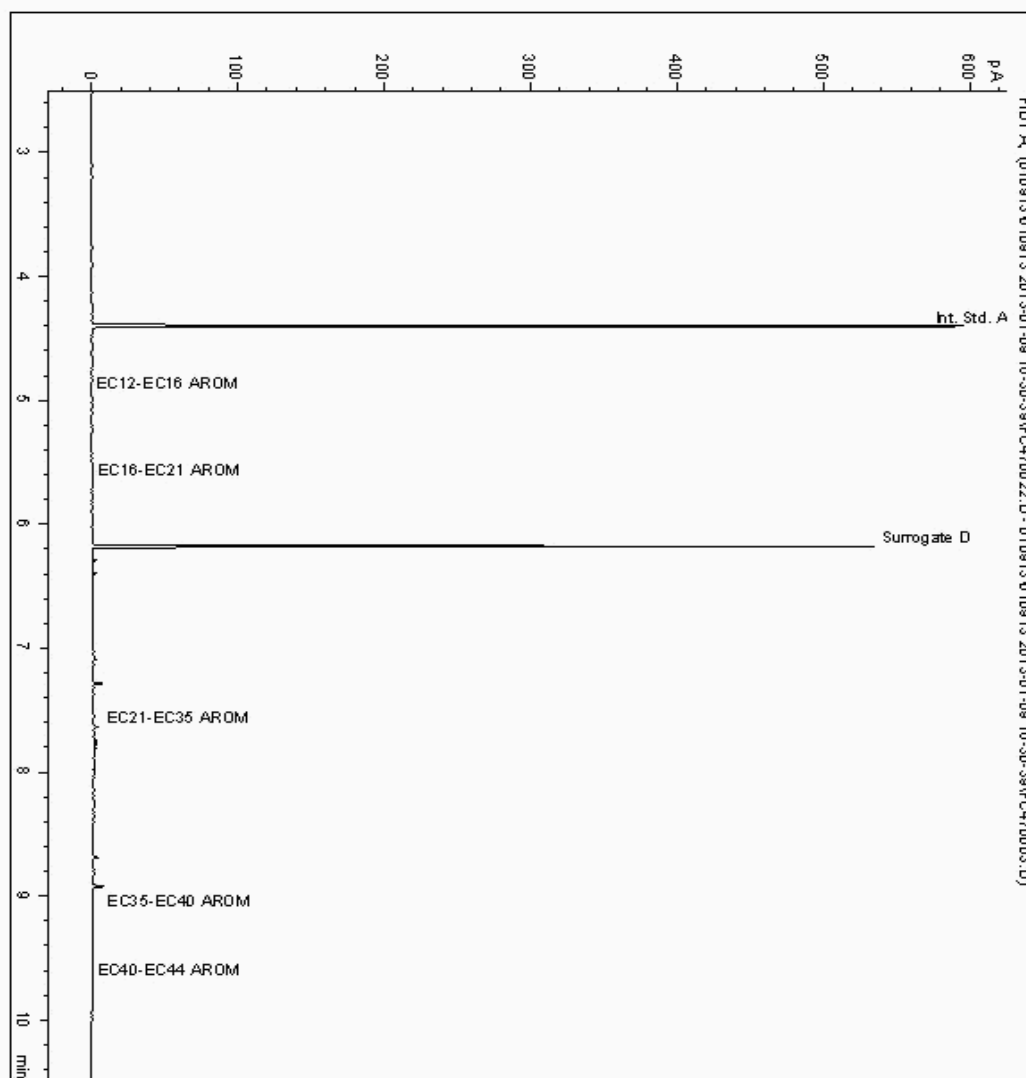
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 6721844
Sample ID : BH4

Depth :

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 6478527-6721844
Date Acquired : 09/01/13 22:53:00
Units :
Dilution :
CF : 1
Multiplier : 1.000





SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

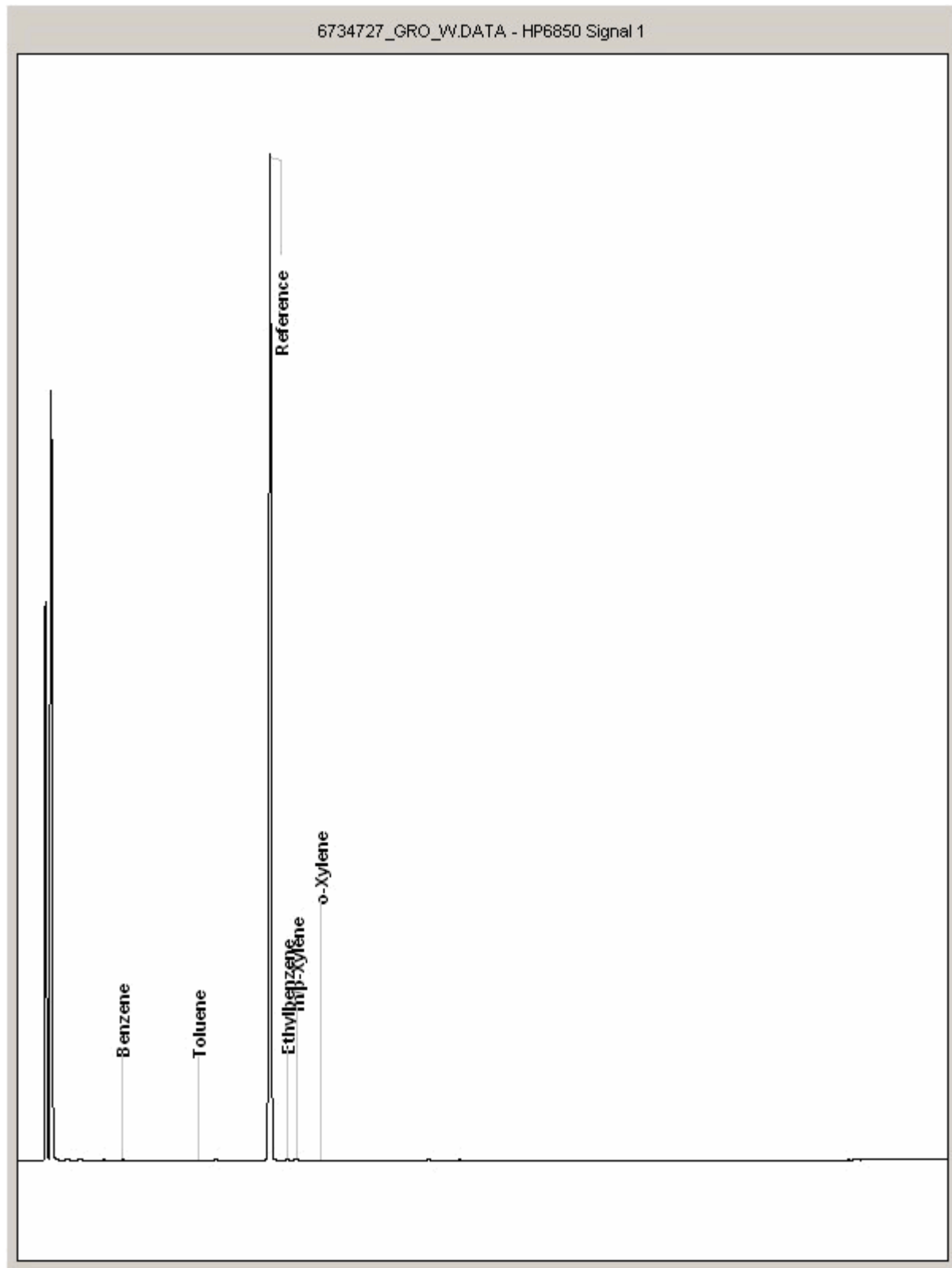
Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6734727
Sample ID : BH1

Depth :





SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

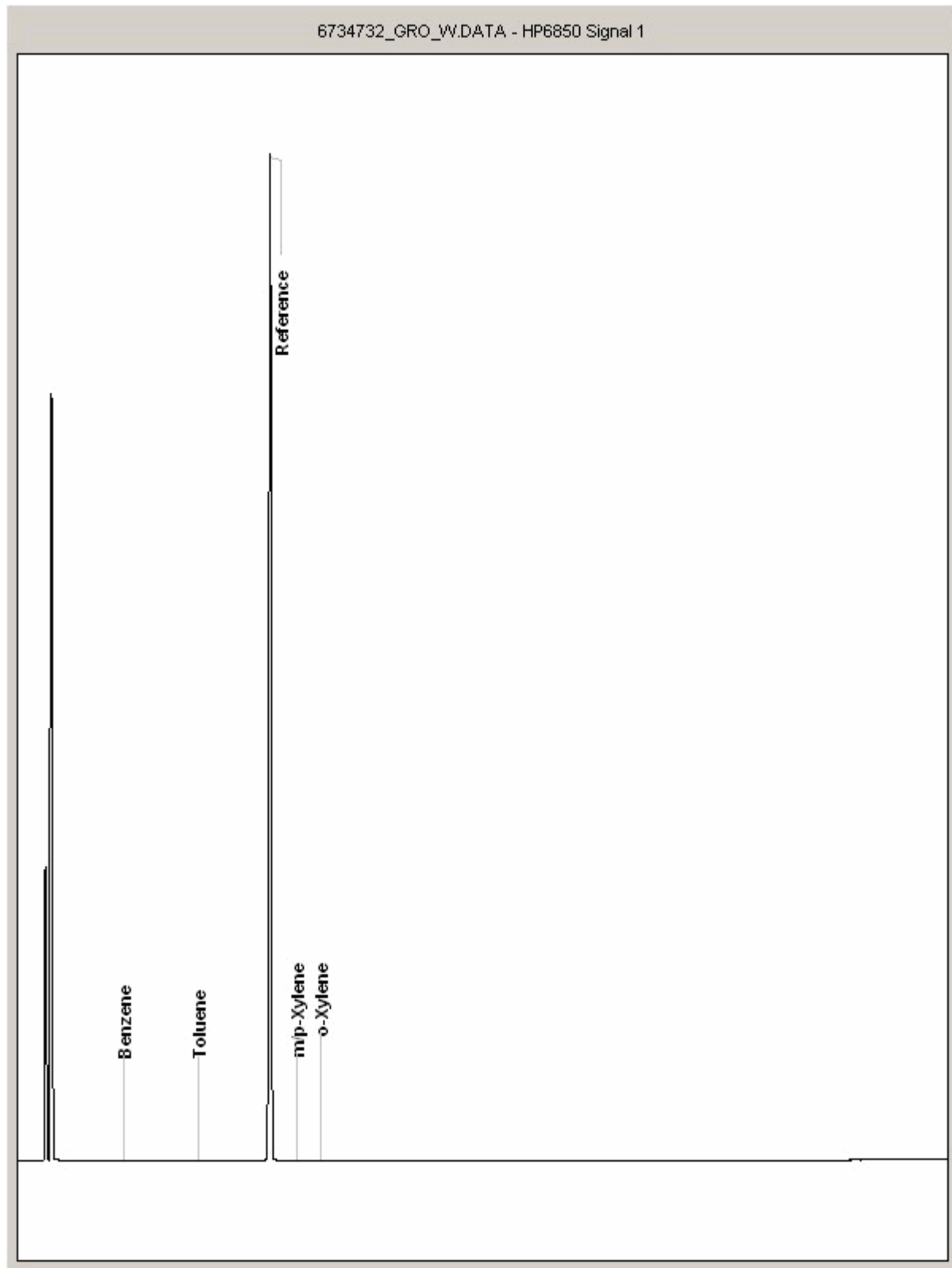
Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6734732
Sample ID : BH2

Depth :





SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

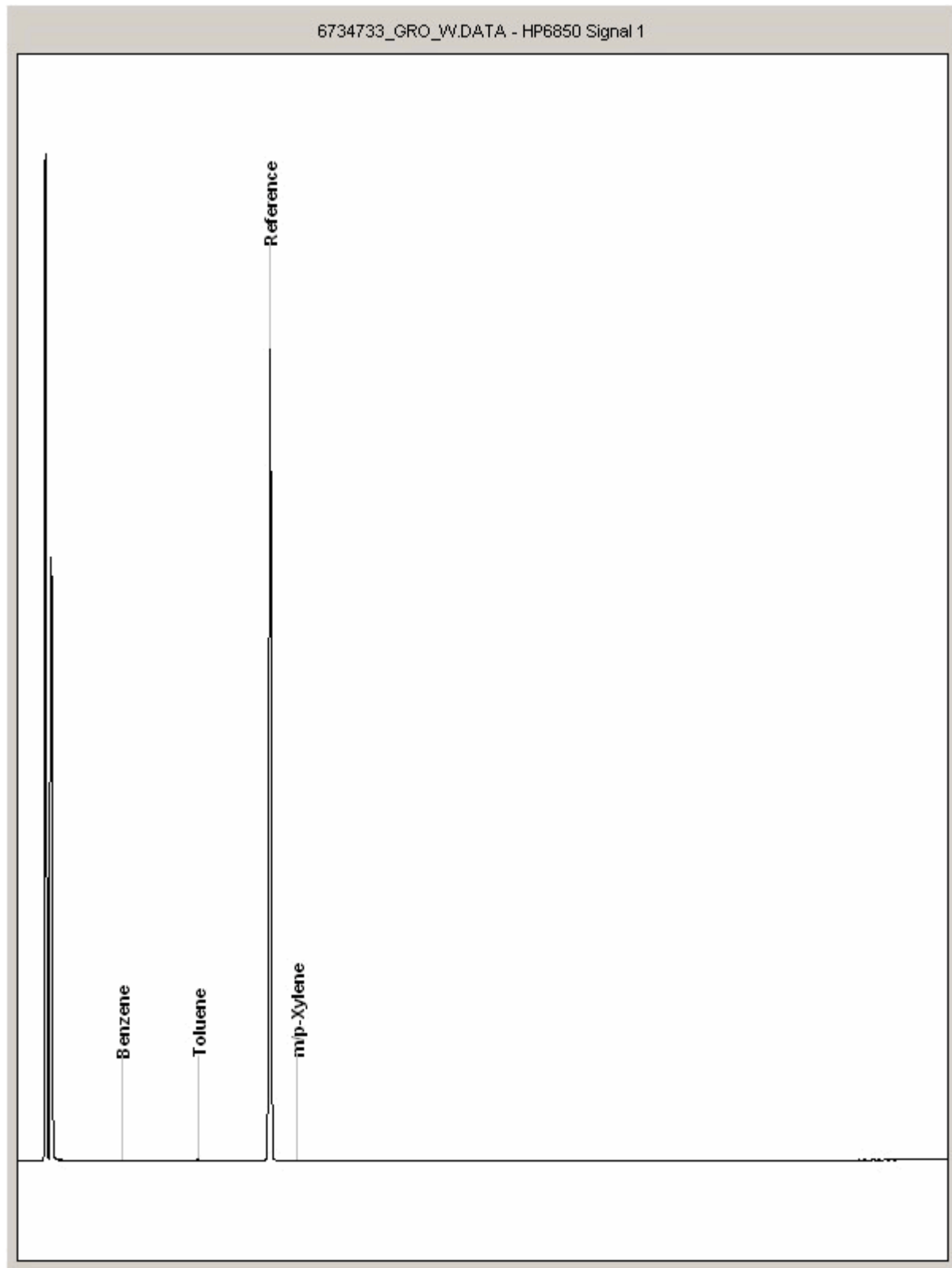
Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6734733
Sample ID : BH3

Depth :





SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

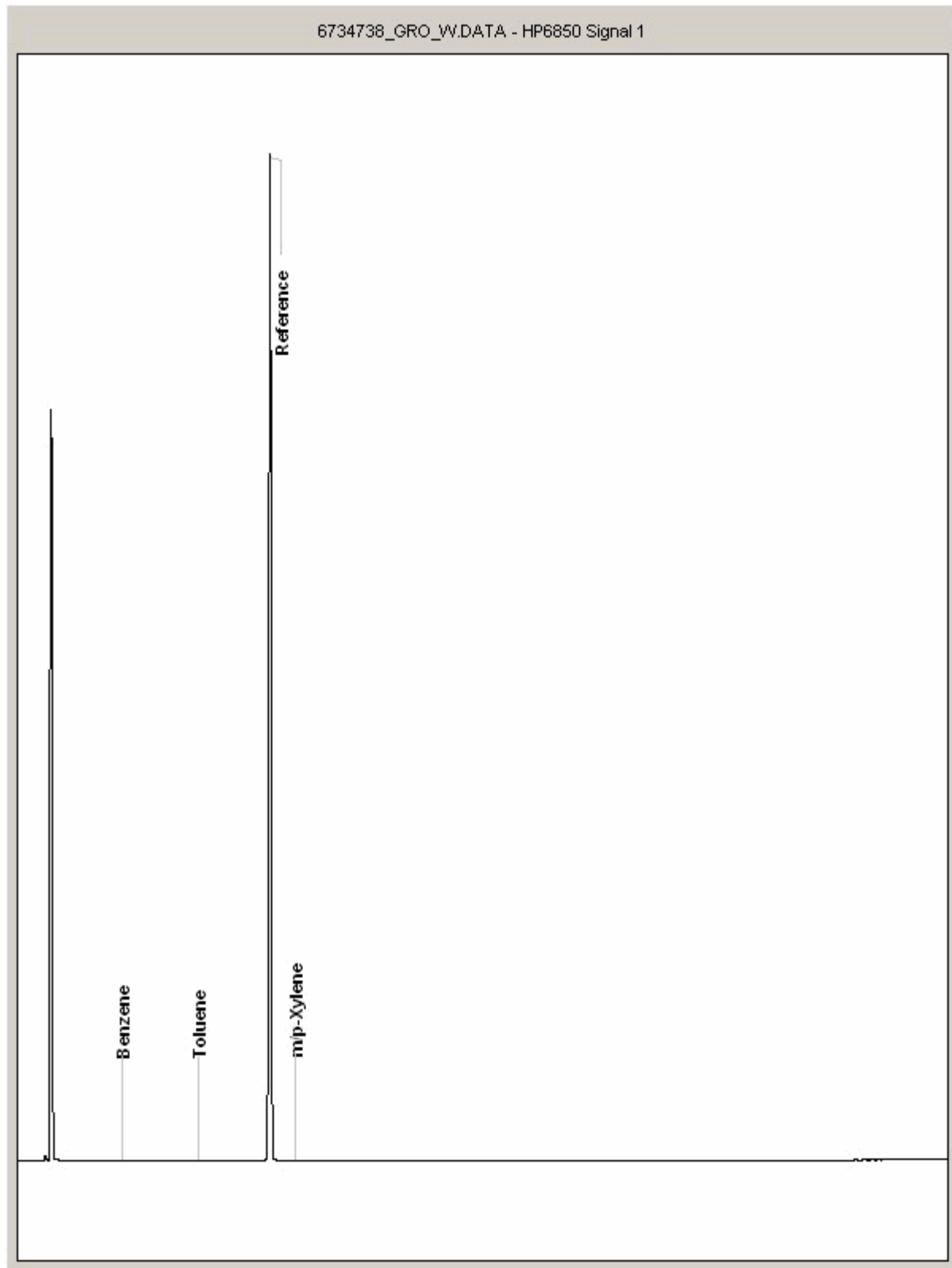
Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6734738
Sample ID : BH4

Depth :





SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

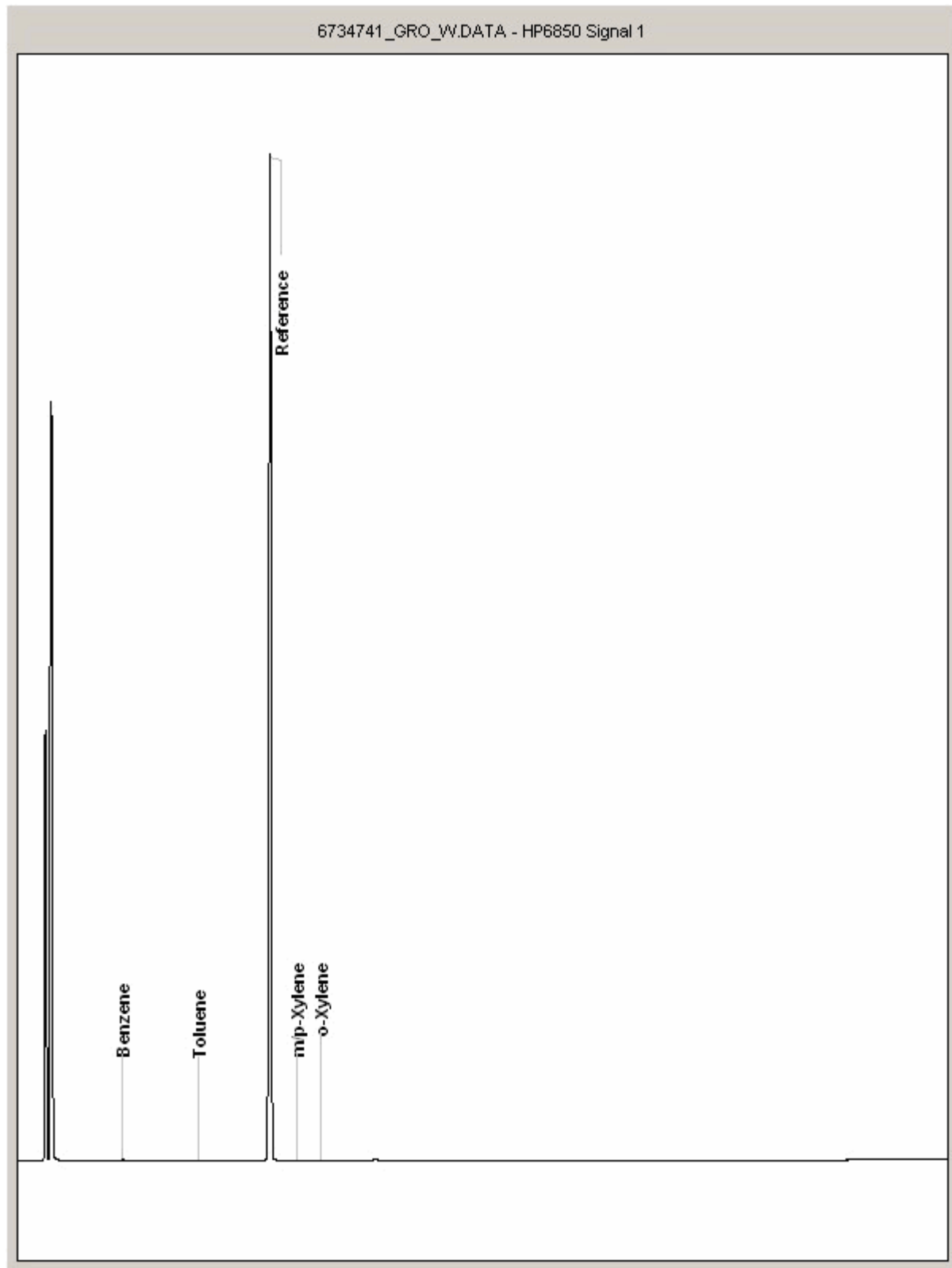
Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6734741
Sample ID : BH5

Depth :





SDG: 121221-72
Job: H_MAYERBROW_WOK-34
Client Reference:

Location: Medina
Customer: Mayer Brown Ltd
Attention: Antony Platt

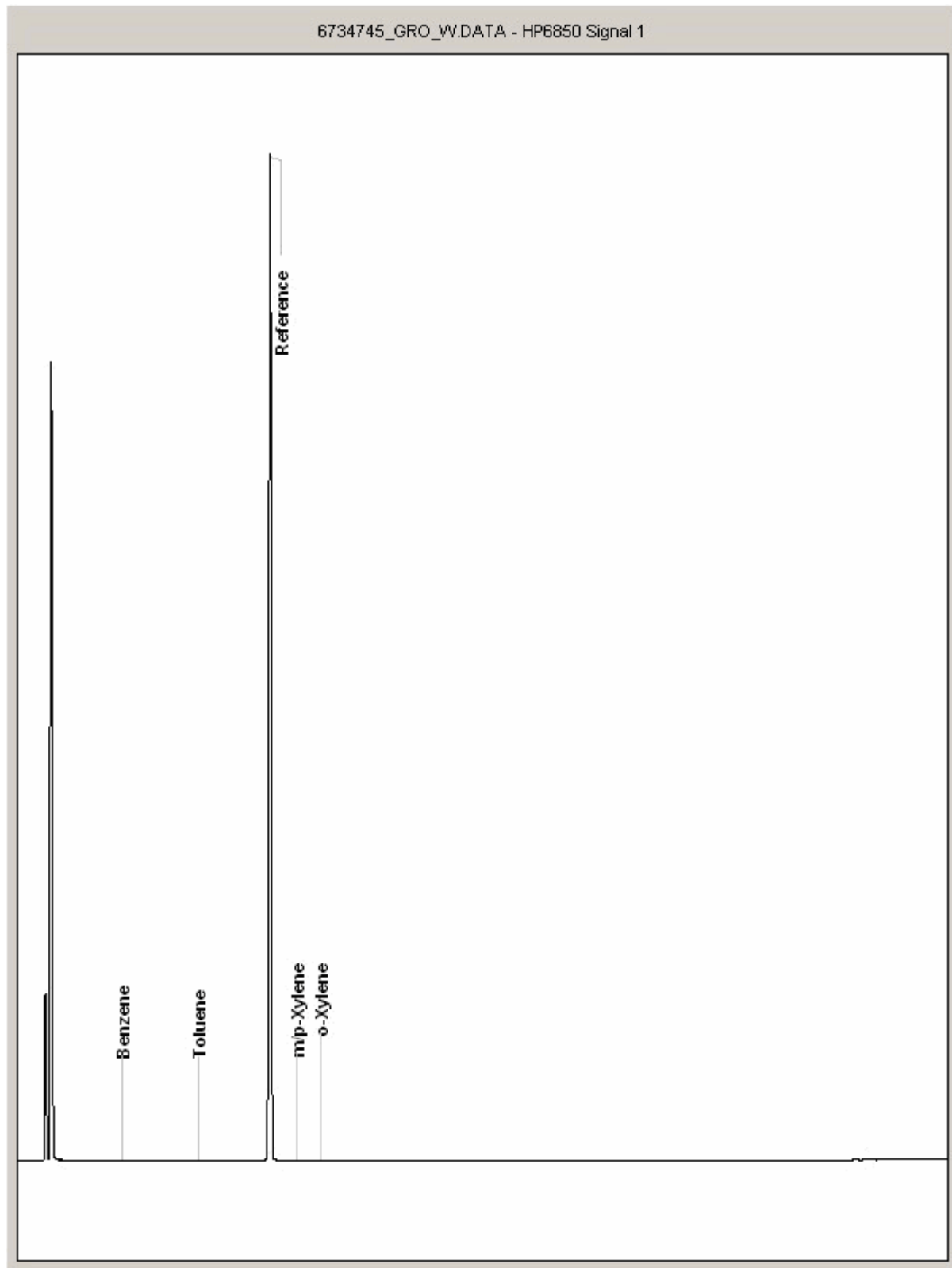
Order Number: R/PDEMedina.9
Report Number: 208352
Superseded Report: 208275

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 6734745
Sample ID : BH104

Depth :





SDG:	121221-72	Location:	Medina	Order Number:	R/PDEMedina.9
Job:	H_MAYERBROW_WOK-34	Customer:	Mayer Brown Ltd	Report Number:	208352
Client Reference:		Attention:	Antony Platt	Superseded Report:	208275

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.
2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.
4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.
7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.
8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
9. NDP -No determination possible due to insufficient/unsuitable sample.
10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.
11. Results relate only to the items tested.
12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.
13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.
14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).
16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).
17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.
22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill /made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
§	Sampled on date not provided
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than :
-
Trace -Where only one or two asbestos fibres were identified.


Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

APPENDIX H: MONITORING DATA

GROUND GAS AND GROUNDWATER MONITORING RESULTS



SITE/REF: Medina Wharf						General Site comments MG - Made Ground, AL - Alluvium, HO - Headon Beds and Osborne Beds				
DATE: 19/12/2012		...1..... of ...1.....								
OPERATOR(S): RP										
Ambient Conditions:										
	Barometric Pressure (mb)	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)	PID (ppm)					
Before Monitoring	1018	<0.1	<0.1	21.3	-	EQUIPMENT				
After Monitoring	1015	<0.1	<0.1	21.3	-	Instrument / Model Type		Serial Number		Comments
Atmospheric Pressure Trend:	Falling					GA2000 Gas Analyser		GA12820		
Ground Conditions:	Wet					Standard Dipmeter		79301		
Weather Conditions:	Raining									

Ground Gas Note: "0" readings to be recorded as instrument detection limit

Borehole ID	Time	Flow (l/hr)	Relative Pressure (mb)	Steady CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)	Peak CH ₄ (%v/v)	% of Lower Explosive Limit	CO (ppm)	H ₂ S (ppm)	Balance (%)	PID (ppm)	Response Zone		Response Strata	Gas screening value CH ₄	Gas screening value CO ₂
													From (mbgl)	To (mbgl)			
BH101	09:45	<0.1	-	<0.1	<0.1	20.3	-	-	-	-	78.8	-	0.3	6.0	MG,HO	0.0001	0.0001
BH102	09:55	<0.1	-	<0.1	0.8	10.3	-	-	-	-	88.8	-	1.0	7.0	MG,AL	0.0001	0.0008
BH103	10:05	<0.1	-	3.1	4.8	0.9	-	-	-	-	91.2	-	0.5	5.9	MG,HO	0.0031	0.0048
BH104	10:10	<0.1	-	0.2	1.5	16.2	-	-	-	-	88.8	-	0.6	6.0	MG,HO	0.0002	0.0015
BH105	10:15	<0.1	-	0.1	0.1	20.2	-	-	-	-	79.8	-	1.0	6.0	MG,HO	0.0001	0.0001
BH1	10:20	<0.1	-	0.4	5.4	6.8	-	-	-	-	87.9	-	1.0	11.6	MG,HO	0.0004	0.0054
BH2	10:25	<0.1	-	<0.1	2.6	12.9	-	-	-	-	87.9	-	1.0	16.2	MG,AL,HO	0.0001	0.0026
BH3	10:30	<0.1	-	1.6	5.5	3	-	-	-	-	90.8	-	1.0	19.1	MG,AL,HO	0.0016	0.0055
BH4	10:35	<0.1	-	9.3	5.2	0.4	-	-	-	-	85.0	-	1.0	10.2	MG,HO	0.0093	0.0052
BH5	10:40	<0.1	-	4.8	6.8	1.3	-	-	-	-	87.1	-	1.0	7.2	MG,HO	0.0048	0.0068

Groundwater

Borehole ID	Standing Water Level (mbgl)	Installation Base Dip (mbgl)	Free Phase LNAPL Thickness (m)	Free Phase DNAPL Thickness (m)	Water Quality Indicators					Well Volume (l)	Purge Volume (l)	Comments (samples)
					Eh	EC	pH	DO	Temp			
BH101	5.65	6.00	-	-	-	-	-	-	-	0.25	10	wv, gb, pb
BH102	6.37	7.00	-	-	-	-	-	-	-	0.45	10	wv, gb, pb
BH103	DRY	5.90	-	-	-	-	-	-	-	N/A	-	-
BH104	3.74	6.00	-	-	-	-	-	-	-	1.60	10	wv, gb, pb
BH105	4.16	6.00	-	-	-	-	-	-	-	1.30	10	wv, gb, pb
BH1	6.78	11.60	-	-	-	-	-	-	-	9.46	28	wv, gb, pb
BH2	6.09	16.20	-	-	-	-	-	-	-	19.84	60	wv, gb, pb
BH3	6.37	19.10	-	-	-	-	-	-	-	24.98	75	wv, gb, pb
BH4	6.03	10.20	-	-	-	-	-	-	-	8.18	25	wv, gb, pb
BH5	3.04	7.20	-	-	-	-	-	-	-	8.16	24	wv, gb, pb


Well volume (l) = (3.14 x (hole diameter (m)/2)² x (base dip (m) - standing water level (m)))x1000 (2l/m in 50mm well)

Gas screening value = gas concentration (%) x gas flow rate (l/hr)

%v/v - Percentage volume by total volume; mbgl - metres below ground level; ppm - parts per million; mb - milibars; l/hr - litres per hour; wv - water vial; gb - 1l glass bottle; pb - 1l plastic bottle

GROUND GAS AND GROUNDWATER MONITORING RESULTS



SITE/REF: Medina Wharf						General Site comments MG - Made Ground, AL - Alluvium, HO - Headon Beds and Osborne Beds					
DATE: 07/01/2013		...1..... of ...1.....									
OPERATOR(S): RP											
Ambient Conditions:											
	Barometric Pressure (mb)	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)	PID (ppm)						
Before Monitoring	1030	<0.1	<0.1	21.3	-	EQUIPMENT					
After Monitoring	1030	<0.1	<0.1	21.3	-	Instrument / Model Type		Serial Number		Comments	
Atmospheric Pressure Trend:	Falling					GA2000 Gas Analyser		GA12820			
Ground Conditions:	Wet					Standard Dipmeter		79301			
Weather Conditions:	Raining										

Ground Gas Note: "0" readings to be recorded as instrument detection limit

Borehole ID	Time	Flow (l/hr)	Relative Pressure (mb)	Steady CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)	Peak CH ₄ (%v/v)	% of Lower Explosive Limit	CO (ppm)	H ₂ S (ppm)	Balance (%)	PID (ppm)	Response Zone		Response Strata	Gas screening value CH ₄	Gas screening value CO ₂
													From (mbgl)	To (mbgl)			
BH103	10:05	<0.1	-	1.5	6.2	0.8	-	-	-	-	91.5	-	0.5	5.9	MG,HO	0.0015	0.0062
BH104	10:10	<0.1	-	<0.1	0.1	20.6	-	-	-	-	79.1	-	0.6	6.0	MG,HO	0.0001	0.0001
BH105	10:15	<0.1	-	4.4	7.4	0.7	-	-	-	-	87.7	-	1.0	6.0	MG,HO	0.0044	0.0074
BH1	10:20	<0.1	-	25	17.1	0.2	-	-	-	-	57.7	-	1.0	11.6	MG,HO	0.025	0.0171
BH2	10:25	<0.1	-	<0.1	2.8	5.7	-	-	-	-	91.4	-	1.0	16.2	MG,AL,HO	0.0001	0.0028
BH3	10:30	<0.1	-	5.8	6.1	0.6	-	-	-	-	87.6	-	1.0	19.1	MG,AL,HO	0.0058	0.0061
BH4	10:35	<0.1	-	0.7	5.5	0.8	-	-	-	-	93.2	-	1.0	10.2	MG,HO	0.0007	0.0055
BH5	10:40	<0.1	-	<0.1	<0.1	20.8	-	-	-	-	78.9	-	1.0	7.2	MG,HO	0.0001	0.0001

Groundwater

Borehole ID	Standing Water Level (mbgl)	Installation Base Dip (mbgl)	Free Phase LNAPL Thickness (m)	Free Phase DNAPL Thickness (m)	Water Quality Indicators					Well Volume (l)	Purge Volume (l)	Comments (samples)
					Eh	EC	pH	DO	Temp			
BH103	DRY	-	-	-	-	-	-	-	-	-	-	-
BH104	-	-	-	-	-	-	-	-	-	-	-	-
BH105	4.17											
BH1	6.86	-	-	-	-	-	-	-	-	-	-	-
BH2	6.03	-	-	-	-	-	-	-	-	-	-	-
BH3	6.35	-	-	-	-	-	-	-	-	-	-	-
BH4	6.03	-	-	-	-	-	-	-	-	-	-	-
BH5	3.25	-	-	-	-	-	-	-	-	-	-	-


Well volume (l) = (3.14 x (hole diameter (m)/2)² x (base dip (m) - standing water level (m)))x1000 (2l/m in 50mm well)

Gas screening value = gas concentration (%) x gas flow rate (l/hr)

%v/v - Percentage volume by total volume; mbgl - metres below ground level; ppm - parts per million; mb - millibars; l/hr - litres per hour; vv - water vial; gb - 1l glass bottle; pb - 1l plastic bottle

GROUND GAS AND GROUNDWATER MONITORING RESULTS



SITE/REF: Medina Wharf						General Site comments MG - Made Ground, AL - Alluvium, HO - Headon Beds and Osborne Beds					
DATE: 15/01/2013		...1..... of ...1.....									
OPERATOR(S): RP											
Ambient Conditions:											
	Barometric Pressure (mb)	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)	PID (ppm)						
Before Monitoring	1016	<0.1	<0.1	21.4	-	EQUIPMENT					
After Monitoring	1016	<0.1	<0.1	21.4	-	Instrument / Model Type		Serial Number		Comments	
Atmospheric Pressure Trend:	Falling					GA2000 Gas Analyser		GA12820			
Ground Conditions:	Wet					Standard Dipmeter		79301			
Weather Conditions:	Dry and cold										

Ground Gas Note: "0" readings to be recorded as instrument detection limit

Borehole ID	Time	Flow (l/hr)	Relative Pressure (mb)	Steady CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)	Peak CH ₄ (%v/v)	% of Lower Explosive Limit	CO (ppm)	H ₂ S (ppm)	Balance (%)	PID (ppm)	Response Zone		Response Strata	Gas screening value CH ₄	Gas screening value CO ₂
													From (mbgl)	To (mbgl)			
BH101	11:05	<0.1	-	0.9	4.6	2.5	-	-	-	-	92.6	-	0.3	6.0	MG,HO	0.0009	0.0046
BH102	11:35	<0.1	-	<0.1	3.5	9.6	-	-	-	-	86.3	-	1.0	7.0	MG,AL	0.0001	0.0035
BH103	11:30	<0.1	-	1.7	7.2	1.6	-	-	-	-	89.5	-	0.5	5.9	MG,HO	0.0017	0.0072
BH104	11:10	<0.1	-	<0.1	0.1	18.5	-	-	-	-	80.1	-	0.6	6.0	MG,HO	0.0001	0.0001
BH105	11:20	<0.1	-	2.8	5.6	8.4	-	-	-	-	83.8	-	1.0	6.0	MG,HO	0.0028	0.0056
BH1	11:25	<0.1	-	27.5	14.4	1.7	-	-	-	-	56.5	-	1.0	11.6	MG,HO	0.0275	0.0144
BH2	11:40	<0.1	-	<0.1	3.8	5.1	-	-	-	-	91.4	-	1.0	16.2	MG,AL,HO	0.0001	0.0038
BH3	11:45	<0.1	-	4.1	6	0.9	-	-	-	-	89.2	-	1.0	19.1	MG,AL,HO	0.0041	0.0060
BH4	11:00	<0.1	-	1.0	4.8	2.1	-	-	-	-	92.8	-	1.0	10.2	MG,HO	0.0010	0.0048
BH5	11:15	<0.1	-	0.1	0.1	20.4	-	-	-	-	79.1	-	1.0	7.2	MG,HO	0.0001	0.0001

Groundwater

Borehole ID	Standing Water Level (mbgl)	Installation Base Dip (mbgl)	Free Phase LNAPL Thickness (m)	Free Phase DNAPL Thickness (m)	Water Quality Indicators					Well Volume (l)	Purge Volume (l)	Comments (samples)
					Eh	EC	pH	DO	Temp			
BH101	5.63	-	-	-	-	-	-	-	-	-	-	
BH102	6.31	-	-	-	-	-	-	-	-	-	-	
BH103	DRY	-	-	-	-	-	-	-	-	-	-	
BH104	3.8	-	-	-	-	-	-	-	-	-	-	
BH105	4.15	-	-	-	-	-	-	-	-	-	-	
BH1	6.74	-	-	-	-	-	-	-	-	-	-	
BH2	6.03	-	-	-	-	-	-	-	-	-	-	
BH3	6.32	-	-	-	-	-	-	-	-	-	-	
BH4	6.02	-	-	-	-	-	-	-	-	-	-	
BH5	2.87	-	-	-	-	-	-	-	-	-	-	


Well volume (l) = (3.14 x (hole diameter (m)/2)² x (base dip (m) - standing water level (m)))x1000 (2l/m in 50mm well)

Gas screening value = gas concentration (%) x gas flow rate (l/hr)

%v/v - Percentage volume by total volume; mbgl - metres below ground level; ppm - parts per million; mb - millibars; l/hr - litres per hour; vv - water vial; gb - 1l glass bottle; pb - 1l plastic bottle

GROUND GAS AND GROUNDWATER MONITORING RESULTS



SITE/REF: Medina Wharf						General Site comments MG - Made Ground, AL - Alluvium, HO - Headon Beds and Osborne Beds					
DATE: 22/01/2013		...1..... of ...1.....									
OPERATOR(S): RP											
Ambient Conditions:											
	Barometric Pressure (mb)	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)	PID (ppm)						
Before Monitoring	1003	<0.1	<0.1	21.3	-	EQUIPMENT					
After Monitoring	1001	<0.1	<0.1	21.3	-	Instrument / Model Type		Serial Number		Comments	
Atmospheric Pressure Trend:	Falling					GA2000 Gas Analyser		GA12820			
Ground Conditions:	Wet					Standard Dipmeter		79301			
Weather Conditions:	Slight rain										

Ground Gas Note: "0" readings to be recorded as instrument detection limit

Borehole ID	Time	Flow (l/hr)	Relative Pressure (mb)	Steady CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)	Peak CH ₄ (%v/v)	% of Lower Explosive Limit	CO (ppm)	H ₂ S (ppm)	Balance (%)	PID (ppm)	Response Zone		Response Strata	Gas screening value CH ₄	Gas screening value CO ₂
													From (mbgl)	To (mbgl)			
BH101	10:35	<0.1	-	0.5	5.9	1.7	0.5	-	-	-	91.9	-	0.3	6.0	MG,HO	0.0005	0.0059
BH102	11:05	<0.1	-	<0.1	2.3	14.9	<0.1	-	-	-	82.7	-	1.0	7.0	MG,AL	0.0001	0.0023
BH103	11:00	<0.1	-	2.5	6.2	0.4	2.5	-	-	-	90.9	-	0.5	5.9	MG,HO	0.0025	0.0062
BH104	10:40	<0.1	-	9.8	5.3	0.5	9.8	-	-	-	84.6	-	0.6	6.0	MG,HO	0.0098	0.0053
BH105	10:50	<0.1	-	4.9	7.3	0.4	4.9	-	-	-	87.5	-	1.0	6.0	MG,HO	0.0049	0.0073
BH1	10:55	<0.1	-	27.6	16.8	0.5	16.8	-	-	-	55.1	-	1.0	11.6	MG,HO	0.0276	0.0168
BH2	11:10	<0.1	-	<0.1	4.7	4.2	<0.1	-	-	-	91.3	-	1.0	16.2	MG,AL,HO	0.0001	0.0047
BH3	11:15	<0.1	-	3.0	5.4	1.6	3	-	-	-	90.5	-	1.0	19.1	MG,AL,HO	0.0030	0.0054
BH4	10:30	<0.1	-	1.1	4.7	2.1	1.1	-	-	-	93	-	1.0	10.2	MG,HO	0.0011	0.0047
BH5	10:45	<0.1	-	12.6	12.4	0.3	12.6	-	-	-	74.9	-	1.0	7.2	MG,HO	0.0126	0.0124

Groundwater

Borehole ID	Standing Water Level (mbgl)	Installation Base Dip (mbgl)	Free Phase LNAPL Thickness (m)	Free Phase DNAPL Thickness (m)	Water Quality Indicators					Well Volume (l)	Purge Volume (l)	Comments (samples)
					Eh	EC	pH	DO	Temp			
BH101	5.65	-	-	-	-	-	-	-	-	-	-	
BH102	6.37	-	-	-	-	-	-	-	-	-	-	
BH103	DRY	-	-	-	-	-	-	-	-	-	-	
BH104	3.74	-	-	-	-	-	-	-	-	-	-	
BH105	4.16	-	-	-	-	-	-	-	-	-	-	
BH1	6.78	-	-	-	-	-	-	-	-	-	-	
BH2	6.09	-	-	-	-	-	-	-	-	-	-	
BH3	6.37	-	-	-	-	-	-	-	-	-	-	
BH4	6.03	-	-	-	-	-	-	-	-	-	-	
BH5	3.04	-	-	-	-	-	-	-	-	-	-	

Well volume (l) = (3.14 x (hole diameter (m)/2)² x (base dip (m) - standing water level (m)))x1000 (2l/m in 50mm well)

Gas screening value = gas concentration (%) x gas flow rate (l/hr)

%v/v - Percentage volume by total volume; mbgl - metres below ground level; ppm - parts per million; mb - milibars; l/hr - litres per hour; vv - water vial; gb - 1l glass bottle; pb - 1l plastic bottle

Water Level Record Sheet

Mayer Brown Ltd

Site Name: Medina Wharf	Operative(s): AP
Date: 17/12/2012	Low Water: 07:04 High Water: 13:56
Water levels in meters below ground level (mbgl)	Measurements with standard dip meter

[illegible]



the journey is the reward